AD_____

Award Number: DAMD17-00-2-0002

TITLE: Support for the Resident Research Associateship Program with the U.S. Army Medical Research and Materiel Command

PRINCIPAL INVESTIGATOR: Judith K. Nyquist, Ph.D.

CONTRACTING ORGANIZATION: National Academy of Sciences
Washington, DC 20418

REPORT DATE: February 2003

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 074-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	February 2003	Annual (24 Jan 02 - 23 Feb 03)

4. TITLE AND SUBTITLE
Support for the Resident Research Associateship Program with the U.S. Army Medical Research and Materiel Command

5. FUNDING NUMBERS
DAMD17-00-2-0002

6. AUTHOR(S) :
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution Unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT ***(Maximum 200 Words)***

none provided

14. SUBJECT TERMS:
research, associateship program

15. NUMBER OF PAGES
73

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

Table of Contents

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
RESEARCH ASSOCIATESHIP PROGRAM

with the

U.S. Army Medical Research Materiel Command (AMRMC)

Annual Contract Technical Report

Report Period: **1/24/2002- 1/23/2003**]

Contract number: DAMD17-00-2-0002

Publicity

The National Academies Research Associateship Programs for the report period were announced to the scientific community in the fall of the preceding year, 2001. Publicity materials describing the National Research Council-U.S. Army Medical Research Materiel Command (AMRMC) Programs were distributed in November to presidents, graduate deans, and heads of appropriate science and engineering departments and minority-affairs offices of all academic degree-granting institutions in the United States. An e-mail announcement of the programs was sent to these same contact points prior to each review deadline. Promotional materials were sent to Laboratory Program Representatives, Associateship Advisers, and other interested persons. General advertisements of programs were placed in leading scientific and engineering publications. Publicity materials and other related information were made available on the internet. Research Associateship Programs staff attended numerous society meetings and minority recruitments to promote the various programs and meet with prospective applicants throughout the year.

Requests

Application materials were distributed in response to specific requests for information about the AMRMC Research Associateship Program or as a result of general requests by persons whose fields of specialization appeared to be appropriate for the research opportunities available in the AMRMC laboratories.

Competition

Panel reviews of applicants for the Research Associateship Programs, including those with the U.S. Army Medical Research Materiel Command, are conducted in winter, spring, summer, autumn of each year. The following is a breakdown of the action taken with the applications during the report period.

	review-year winter -02	spring- 02	summer- 02	autumn- 03	TOTAL
TOTAL APPLICATIONS	**16**	**17**	**4**	**12**	**49**
Number of Applications Reviewed	**15**	**12**	**2**	**11**	**40**
Applications not recommended (did not pass Review)	1	5	2	1	**9**
Applications Recommended (passed Review)	**16**	**17**	**4**	**12**	**49**
Awards offered	9	6	0	7	**22**
Awards accepted	9	5	0	4	**18**
Awards declined	0	1	0	3	**4**
Awards withdrawn by RAP (NRC officially withdrew award *after* it had been accepted.)	1	3	0	1	**5**

Associates' Citizenship

Associates on tenure between **1/24/2002** and **1/23/2003** were citizens or Permanent Residents of the following countries:

- **3 Australia**
- **1 Bangladesh**
- **1 Denmark**
- **1 Ghana**
- **2 Hungary**
- **4 India**
- **4 Israel**
- **1 Italy**
- **1 Mexico**
- **5 People's Republic of China**
- **1 Poland**
- **3 Russia**
- **1 Ukraine**
- **30 United States**

Associates' Activities

Associates who ended tenure during the report period were on tenure for an average of **27** months, ranging from **12** months to **42** months.

Of the **12** Associates who ended tenure during the report period, **10 (83%)** submitted final reports. In the final reports, Associates indicated the following scholarly activity while on tenure.

10 Articles published in refereed journals
2 Patent applications
6 International presentations
20 Domestic presentations
1 Awards

After ending their tenure, Associates indicated their future plans as follows:

- Remain at host agency as perm. employee
5 Remain at host agency as contract employee
1 Research position at other US gov't. lab
- Administrative position at US gov't. lab
2 Research position at foreign gov't. lab
- Research/teaching-US college/university
- Research/teaching-foreign college/university
1 Research/admin in industry
- Research/admin in non-profit organization
- Postdoctoral research
1 Self employed
- Other (may include unemployed)

In their final reports, Associates were asked to evaluate certain aspects of their experiences on a scale of 1 (low) to 10 (high). The average rating for each item follows:

-- *Short-term value:* Development of knowledge, skills, and research productivity
-- *Long-term value:* How your Research Associateship affected your career to date
8.6 *Laboratory:* Quality of the support you received from the federal laboratory
8.8 *RAP:* Quality of the support you received from the Research Associateship Programs

Advisers also were asked to complete an evaluation of the Associate. The following summarizes the Adviser evaluations for Associates ending tenure during the report period. Of the **12** Associates who ended tenure, **4 (33%)** Adviser evaluations were completed. Assessments were made on six criteria using the following rating scale: 1-below average, 2-average, 3-above average, 4-good, and 5-outstanding/exceptional. The average rating for each item follows:

3.6 Knowledge of field
3.3 Innovative thinking
4.0 Research techniques
3.8 Independence
3.8 Motivation
3.3 Overall scientific ability

The Adviser was asked, "Would you like this Associate as a professional colleague?" The Advisers responded in the following manner:

3 **Yes**
1 **No**
-- **No Comment**
-- **No Answer**

Additional information about the Associates' activities can be found in the attachments described below and the Appendix.

Attachment 1: Associates who were on tenure between **1/24/2002** and **1/23/2003**. Included are the Associate's laboratory center/division location, the starting and termination dates, and the names of their advisers. For those Associates who ended tenure during the report period, it is noted if the final and adviser evaluation reports have been received. Associates are required to submit final reports upon termination of tenure, and advisers are asked to submit a final evaluation of each Associate. Associates who have not submitted a final report have received follow-up correspondence.

Attachment 2: All recommended candidates by category (e.g., Recommended, Accepted, No Funding, Declined, etc.). This report includes information about citizenship, the Ph.D. institution, the title of proposed research, proposed or actual starting date, and adviser.

Attachment 3: Summaries of Associate patent activity, if any, and Associate research during tenure as reported on the Associates' termination reports. The summary of patent activity includes the patent application title, inventor(s), and date of application.

Appendix: Final reports received from the Associates who ended tenure during the report period.

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Peng, Daizhi *Dr. Albert T. McManus*	(S) Divison not specified	1/5/1999 - 5/4/2002	Received	Received

1 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Dillman, James F., III *Dr. John J. Schlager*	Pharmacology Division	11/29/1999 - 4/19/2002	Received	Not Recd
Kerchner, Michael Thomas *Dr. Gary A. Rockwood*	(S) Drug Assessment Division	7/1/2002 - 4/30/2003		
Manley, Heather *Dr. Michael Adler*	Pharmacology Division	9/9/2002 - 9/8/2003		
Petrikovics, Ilona *Dr. Steven I. Baskin*	(S) Pharmacology Division	1/3/2003 - 1/2/2004		
Roberson, Melinda Rice *Dr. John H. McDonough*	Pharmacology Division	5/2/2000 - 5/31/2002	Received	Not Recd

5 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Coberley, Sadie Shea *Dr. Michael Hevey*	Virology Division	7/29/2002 - 7/28/2003		
Cote, Christopher Kevin *Dr. Susan L. Welkos*	Bacteriology Division	4/29/2002 - 4/28/2003		
Erwin, James Lawrence *Dr. Tran C. Chanh*	Pathology Division	8/10/1998 - 2/9/2002	Received	Received
Grogan, Case Kyn *Dr. Alan L. Schmaljohn*	Virology Division	6/26/2000 - 8/9/2002	Received	Not Recd
Keller, Michael Anthony *Dr. Alan L. Schmaljohn*	Virology Division	12/9/2002 - 12/8/2003		
Lackner, Daniel Francis *Dr. Michael Hevey*	Virology Division	6/3/2002 - 6/2/2003		
Mores, Christopher Nicolas *Dr. Michael J. Turell*	Virology Division	8/1/2002 - 7/31/2003		
Riemenschneider, Jenny Lynn *Dr. Connie S. Schmaljohn*	Virology Division	3/1/2000 - 7/19/2002	Received	Not Recd
Shurtleff, Amy Christine *Dr. Mary C. Guttieri*	Bacteriology Division	5/21/2002 - 5/20/2003		
Swenson, Dana Linne *Dr. Sina Bavari*	(S) Toxinology Division	3/13/2002 - 3/12/2003		
Warfield, Kelly Lyn *Dr. Sina Bavari*	Toxinology Division	6/17/2002 - 6/16/2003		

11 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Weyand, Peter Gregory *Dr. Reed W. Hoyt*	(S) Divison not specified	9/20/1999 - 12/31/2002	Not Recd	Not Recd

1 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Allon, Nahum *Dr. Carl R. Alving*	(S) Division Of Biochemistry	8/1/2000 - 3/6/2002	Received	Received
Babai, Ilan *Dr. Carl R. Alving*	Division Of Biochemistry	7/17/2000 - 7/16/2002	Not Recd	Not Recd
Cohen, Sara *Dr. Luther E. Lindler*	(S) Division Of Commun Diseases/Immunology	8/2/2001 - 8/1/2002	Received	Not Recd
Darko, Christian Asare *Dr. Jeffrey A. Lyon*	Division Of Commun Diseases/Immunology	11/9/1998 - 5/8/2002	Received	Not Recd
Dow, Geoffrey Stuart *Dr. Rodger K. Martin*	Division Of Experimental Therapeutics	8/7/2000 - 8/6/2002	Received	Not Recd
Fleming, Sherry D. *Dr. George C. Tsokos*	Division Of Medicine	1/2/2001 - 1/1/2003	Received	Not Recd
Guerrero-Ontiveros, Maria de Lourd *Dr. Luther E. Lindler*	Division Of Commun Diseases/Immunology	2/16/1999 - 8/13/2002	Received	Received
Iversen, Johanne Birgitte *Dr. Ladaporn Bodhidatta*	Armed Forces Res Inst Med Sci-Bangkok	3/11/2002 - 3/10/2003		
Leader, Haim Nissan *Dr. Richard K. Gordon*	(S) Division Of Biochemistry	11/4/2002 - 5/3/2003		
Milosevits, Janos *Dr. Carl R. Alving*	(S) Division Of Biochemistry	7/3/2000 - 7/2/2002	Received	Not Recd
Nair, Lalitha Punchayil Velayudhan *Dr. David E. Lanar*	(S) Division Of Commun Diseases/Immunology	0/11/2000 - 10/10/200	Received	Not Recd
Russell, Bruce *Dr. Jetsumon P. Sattabongkot*	Armed Forces Res Inst Med Sci-Bangkok	4/11/2002 - 4/10/2003		
Thakur, Suman Siddharth *Dr. Bhupendra P. Doctor*	Division Of Biochemistry	1/18/2002 - 11/17/200		
Yuan, Huijun *Dr. Carl R. Alving*	Division Of Biochemistry	4/9/2001 - 3/31/2002	Received	Not Recd
Zhang, Peng *Dr. Peter K. Chiang*	(S) Division Of Biochemistry	2/1/1999 - 7/31/2002	Received	Received
Zhu, Shuren *Dr. Ai J. Lin*	Division Of Experimental Therapeutics	11/1/1999 - 10/31/2002	Received	Received
Zollner, Gabriela Elaine *Dr. James W. Jones*	Armed Forces Res Inst Med Sci-Bangkok	4/22/2002 - 4/21/2003		

17 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

AMRMC- U.S. Army Medical Research Institute of Chemical Defense

February 2002

A- Accepted Award

KERCHNER, MICHAEL T — Ph.D. Date: 1988
Citizenship: United States — Lehigh University/PA
Adviser: Dr. Gary A. Rockwood — Actual Starting Date: 7/01/02
Research Field: Neurotoxicology — Termination Date: 4/30/03
Research Title: Identifying Effective Pharmacological Interdiction and Treatment Options for Acute Soman Exposure: Further Refinement of a Predictive Animal Model

W- Withdrew after Review/Recommend

AYALA-SILVA, TOMAS — Ph.D. Date: 2001
Citizenship: United States — Alabama Agricultur & Mechanical U
Adviser: Dr. Carmen M. Arroyo
Research Field: Biophysical Chemistry
Research Title: A Novel Multiple Therapeutical Approach (MTA) for the Development of a Candidate Topical Skin Protectant (TSP)

June 2002

A- Accepted Award (2 Applicants listed)

MANLEY, HEATHER — Ph.D. Date: 2002
Citizenship: United States — Mayo Graduate School/MN
Adviser: Dr. Michael Adler — Actual Starting Date: 9/09/02
Research Field: Neuropharmacology — Termination Date: 9/08/03
Research Title: Intracellular Trafficking of a Delivery Vehicle for Antagonists of Botulinum Neurotoxin

PETRIKOVICS, ILONA — Ph.D. Date: 1985
Citizenship: United States — Debrecen U Med
Adviser: Dr. Steven I. Baskin — Actual Starting Date: 1/03/03
Research Field: Toxicology — Termination Date: 1/02/04
Research Title: Cyanide Determination in Biological Fluids in the Presence of Various Cyanide Antidotes: Analytical, Toxicity and Antagonism Studies

October 2002

1- Recommended

LANGSTON, JEFFREY L — Ph.D. Date: 2002
Citizenship: United States — Auburn University/AL
Adviser: Dr. Maurice L. Sipos
Research Field: Neurotoxicology
Research Title: Development of a Guinea Pig Test Battery to Assess the Behavioral Effects of Exposure to Chemical Warfare Nerve Agents

* * *

February 2002

1- Recommended (3 Applicants listed)

AIT ICHOU, MOHAMMED — Ph.D. Date: 1996
Citizenship: United States — Tours, U Of
Adviser: Dr. Robert G. Ulrich
Research Field: Immunology
Research Title: Transcutaneous Immunization with Recombinant Staphylococcal Enterotoxin Vaccines

HAWASH, IBRAHIM — Ph.D. Date: 2002
Citizenship: Jordan — Purdue University/IN
Adviser: Dr. Sina Bavari
Research Field: Biological Sciences
Research Title: Role of Lipid Raft Microdomains in Bacterial Superantigen Pathogenecity

YU, CHENGGANG — Ph.D. Date: 2002
Citizenship: People's Republic of China — University of Cincinnati/OH
Adviser: Dr. Jaques Reifman
Research Field: Biomathematics
Research Title: Computer Systmes for Analysis of Proteins

A- Accepted Award (4 Applicants listed)

LACKNER, DANIEL F — Ph.D. Date: 2002
Citizenship: United States — University of Florida
Adviser: Dr. Michael Hevey — Actual Starting Date: 6/03/02
Research Field: Molecular Virology — Termination Date: 6/02/03
Research Title: Identification of Viral and Host Cell Factors which Contribute to Marburg Virus Pathogenesis

MORES, CHRISTOPHER N — Ph.D. Date: 2002
Citizenship: United States — Harvard University/MA
Adviser: Dr. Michael J. Turell — Actual Starting Date: 8/01/02
Research Field: Emergency Medicine — Termination Date: 7/31/03
Research Title: Genotypic and Phenotypic Analysis of Bunyavirus Reassortants in Iquitos, Peru

SWENSON, DANA L — Ph.D. Date: 1993
Citizenship: United States — University of Iowa
Adviser: Dr. Sina Bavari — Actual Starting Date: 3/13/02
Research Field: Virology — Termination Date: 3/12/03
Research Title: The Mechanism of Compartmentalization in Lipid Rafts During Filovirus Assembly and Budding

WARFIELD, KELLY L
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Viral Immunology
Ph.D. Date: 2001
Baylor College of Medicine/TX
Actual Starting Date: 6/17/02
Termination Date: 6/16/03
Research Title: Establishment of a Model to Examine Viral Antigens in Human Context: "Immunologically Humanized" Transgenic Mice Expressing Human MHC Class II/CD4 and MHC Class I/CD8 Receptors

June 2002

Z- Recommended/No Funding

MARINER, JENNIFER
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Molecular Immunology
Ph.D. Date: 2002
George Washington University/DC
Research Title: Role of Cholesterol-Rich Lipid Raft Microdomains in Bacterial Superantigen Toxicity

A- Accepted Award

COBERLEY, SADIE S
Citizenship: United States
Adviser: Dr. Michael Hevey
Research Field: Viral Immunology
Ph.D. Date: 2002
University of Florida
Actual Starting Date: 7/29/02
Termination Date: 7/28/03
Research Title: Use of Filovirus Specific Antibodies to Evaluate Mechanisms of Virus Neutralization and Protective Epitopes

8- Declined

HOWARD, ELLEN M
Citizenship: United States
Adviser: Dr. John H. Carra
Research Field: Biophysics
Ph.D. Date: 2002
Georgetown University/DC
Research Title: Biophysics of Structure and Function in the VP40 Proteins of Ebola and Marburg Viruses

W- Withdrew after Review/Recommend (2 Applicants listed)

CHAWLA, NITESH V
Citizenship: India
Adviser: Dr. Jaques Reifman
Research Field: Biomathematics
Ph.D. Date: 2002
University of South Florida
Research Title: Physiologic Database Mining to Reduce Military Casualty Mortality and Morbidity

TRUTSCHL, MARJAN — Ph.D. Date: 2002
Citizenship: Slovenia — University of Mass-Lowell
Adviser: Dr. Jaques Reifman
Research Field: Biomathematics
Research Title: Visualization and Analysis Tools to Support Bioinformatics and Biomedical Computational Needs

October 2002

1- Recommended

RHOADES, ELIZABETH R — Ph.D. Date: 1997
Citizenship: United States — Colorado State University
Adviser: Dr. Sina Bavari
Research Field: Immunology
Research Title: Identification of Human MHC Class II-Restricted Epitopes of the Protective antigen (PA) and Novel Correlates of Immunity

A- Accepted Award (2 Applicants listed)

FRITZ, ELIZABETH A — Ph.D. Date: 2002
Citizenship: United States — Rush University/IL
Adviser: Dr. Peter B. Jahrling — Expected Starting Date: 3/03/03
Research Field: Virology — Termination Date: 3/02/04
Research Title: Modulation of the Immune Response During Smallpox and Monkeypox Infections

KELLER, MICHAEL A — Ph.D. Date: 2002
Citizenship: United States — Wake Forest University/NC
Adviser: Dr. Alan L. Schmaljohn — Actual Starting Date: 12/09/02
Research Field: Virology — Termination Date: 12/08/03
Research Title: Therapeutic Targeting of Filovirus RNA-Deendent RNA Polymerase

8- Declined (3 Applicants listed)

ELLISON, MICHAEL A — Ph.D. Date: 2002
Citizenship: United States — University of Utah
Adviser: Dr. Leonard A. Smith
Research Field: Biochemistry
Research Title: Development of Vaccines Against Botulinum Neurotoxin Type G

GARRUS, JENNIFER E — Ph.D. Date: 2002
Citizenship: United States — University of Utah
Adviser: Dr. Sina Bavari
Research Field: Virology
Research Title: Late Domain Mediated Filovirus Budding

MARIANS, RUSSELL C
Citizenship: United States
Adviser: Dr. Bradford Powell
Research Field: Bacteriology
Research Title: Characterizing the Immune Response to the F1-V Y.Pestis Vaccine

Ph.D. Date: 2001
Mt Sinai School of Medicine-CUNY

* * *

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- Walter Reed Army Institute of Research

February 2002

Z- Recommended/No Funding

MON, HLA M — Ph.D. Date: 2000
Citizenship: Myanmar — Nagasaki University
Adviser: Dr. Russell E. Coleman
Research Field: Entomology Parasitology
Research Title: Development of In Vitro Exoerythrocytic State of Human Malaria, Plasmodium Falciparum and Plasmodium Vivax

1- Recommended

HOANG, PHUC K — Ph.D. Date: 2002
Citizenship: Vietnam — Liverpool, U Of
Adviser: Dr. Russell E. Coleman
Research Field: Entomology
Research Title: Sporogonic Development and Influential Factors on the Vector-Plasmodial Parasites Interaction in the Field

A- Accepted Award (4 Applicants listed)

CHEN, YUE-QIN — Ph.D. Date: 1996
Citizenship: People's Republic of China — Zhongshan University/China
Adviser: Dr. Peter K. Chiang — Expected Starting Date: 2/03/03
Research Field: Molecular Biology — Termination Date: 2/02/04
Research Title: Expression and Regulation of Genes Involved in Apoptosis by Sulfur Mustards (HD) and 2-Chloroethylethyl Sulfide (CEES)

MIROSHNIKOVA, OLGA V — Ph.D. Date: 1999
Citizenship: Russia — Russian Academy of Medical Sci
Adviser: Dr. Ai J. Lin — Expected Starting Date: 2/24/03
Research Field: Medicinal Chemistry — Termination Date: 2/23/04
Research Title: Potential Inhibitors of Malaria Parasites

RUSSELL, BRUCE — Ph.D. Date: 2001
Citizenship: Australia — Univ of Queensland/Australia
Adviser: Dr. Jetsumon P. Sattabongkot — Actual Starting Date: 4/11/02
Research Field: Parasitology — Termination Date: 4/10/03
Research Title: Development of an In-Vitro Exoerythrocytic Stage of Plasmodium Vivax for Applied Studies in Malaria Drug and Vaccine Development

ZOLLNER, GABRIELA E — Ph.D. Date: 2001
Citizenship: United States — University of Greenwich/England
Adviser: Dr. James W. Jones — Actual Starting Date: 4/22/02
Research Field: Entomology Parasitology — Termination Date: 4/21/03
Research Title: Population Dynamics of Sporogony in Thailand

June 2002

A- Accepted Award (2 Applicants listed)

LEADER, HAIM N — Ph.D. Date: 1970
Citizenship: Israel — Hebrew Univ of Jerusalem/Israel
Adviser: Dr. Richard K. Gordon — Actual Starting Date: 11/04/02
Research Field: Biochemical Pharmacology — Termination Date: 5/03/03
Research Title: Purification of Proteins with Macroaffinity Ligand Sponges (polyurethane immobilized ligands)

THAKUR, SUMAN S — Ph.D. Date: 2002
Citizenship: India — University of Delhi/India
Adviser: Dr. Bhupendra P. Doctor — Actual Starting Date: 11/18/02
Research Field: Biological Chemistry — Termination Date: 11/17/03
Research Title: Synthesis/Isolation of Novel Reactivators for Treatment Against Nerve Agent Toxicity

W- Withdrew after Review/Recommend

CAHILL, KEVIN E — Ph.D. Date: 1967
Citizenship: United States — Harvard University/MA
Adviser: Dr. David E. Lanar
Research Field: Molecular Biophysics
Research Title: Protein Folding

X- NRC Withdrew Award

DU, YIDONG — Ph.D. Date: 2002
Citizenship: People's Republic of China — Umea,Univ Of
Adviser: Dr. Luther E. Lindler
Research Field: Medical Microbiology
Research Title: Study on the Genes of Yersinia Pestis that Expressed Inside Macrophage

October 2002

1- Recommended

SALLUM, MARIA A — Ph.D. Date: 1994
Citizenship: Brazil — Sao Paulo, U
Adviser: Dr. Richard C. Wilkerson
Research Field: Systematic Biology
Research Title: Systematic Revision and Phylogenetic Analysis of the Leucosphyrus Group of the Anopheles (Cellia) (Diptera: Culicidae)

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- Walter Reed Army Institute of Research

A- Accepted Award (2 Applicants listed)

KUBATA, BRUNO K
Citizenship: Congo
Adviser: Dr. Samuel K. Martin
Research Field: Molecular Pathology
Research Title: The Role of Arachidonic Acid Metabolites in the Life Cycle and Pathogenesis of Parasitic Protozoa

Ph.D. Date: 1998
Osaka City University/Japan
Expected Starting Date: 3/31/03
Termination Date: 3/30/04

THATHY, VANDANA
Citizenship: Kenya
Adviser: Dr. Jose A. Stoute
Research Field: Infectious Diseases
Research Title: Complement Receptor 1 Gene Polymorphisms and Severe Plasmodium falciparum Malaria

Ph.D. Date: 2000
New York University
Expected Starting Date: 5/01/03
Termination Date: 4/30/04

W- Withdrew after Review/Recommend

ABANULO, JUDE C
Citizenship: England, U.K.
Adviser: Dr. Richard K. Gordon
Research Field: Biotechnology
Research Title: Hand Held Cholinesterase Units

Ph.D. Date: 2002
University of Southampton/Eng

November 2002

1- Recommended (2 Applicants listed)

KADAR, TAMAR
Citizenship: Israel
Adviser: Dr. James M. Petras
Research Field: Neurotoxicology
Research Title: Effects of Low Dose Exposure of Organophosphates on Synaptic Plasticity in the Central Nervous System

Ph.D. Date: 1989
Technion-Israel Institute of Tech

KONGKASURIYACHAI, DARIN
Citizenship: Thailand
Adviser: Dr. Jetsumon P. Sattabongkot
Research Field: Infectious Diseases
Research Title: Molecular Mechanism of Relapsing Malaria: Identification of Hypnozoite Stage Antigens by Differential Display

Ph.D. Date: 2003
Johns Hopkins University/MD

* * *

U.S. Army Medical Research and Materiel Command

Darko, Christian Asare 11/09/1998 5/08/2002

1 Patent Title: Development of an E.coli Expressed Recombinant MSP-142 (FVO) as a Vaccine for Malaria

Co-authors: Evelina Angov, Christian A. Darko, Jeffrey A. Lyon
Date Applied For: 3/18/2002 Date Approved For:

Grogan, Case Kyn 6/26/2000 8/09/2002

1 Patent Title: Chimeric Filovirus Glycoprotein

Co-authors: Case C. Grogan, Michael C. Hevey, and Alan L. Schmaljohn
Date Applied For: 1/31/2002 Date Approved For:

Nair, Lalitha Punchayil Velayudhan 10/11/2000 10/10/2002

1 Patent Title: Process for purification of recombinant Plasmodium falciparum AMA-1 from E.coli

Co-authors: D.E. Lanar, S. Dutta, L.A. Ware and Lalitha P.V.
Date Applied For: 3/26/2002 Date Approved For:

AMRMC- U.S. Army Medical Research and Materiel Comm:

Allon, Nahum **8/01/2000 3/06/2002**

2 A plasmid containing human butyrylcholinesterase gene was successfully encapsulated in small unilamelar liposomes (150-200nm) with high efficiency (>60%). The encapsulated liposomes were purified from the non encapsulated DNA.

4 Fusion peptides were designed synthetized and tested in in-vitro and in-vivo system. The fusion peptides are designed to change their conformation due to changes in the pH and thus disrupt the endosomal membrane and release the plasmid.

6 Six targeting peptides for lung cells were designed and tested for their selectivity to various lung cell lines.

8 Various linkers for the conjugation between the peptides and the liposomes were tested. The direct linkage to the phospholipid was finally adopted for further research.

10 An animal model using an otoscopic intra-trachealy instillation of liposomes containing plasmid were tested and adopted for the in-vivo testing of the delivery system.

Cohen, Sara **8/02/2001 8/01/2002**

1 Substractive genome [chromosome] analysis of Y.pestis done at the end of 2001, yielded 127 unique ORFs (done by the bioinformatics group at IIBR).

2 The selected ORFs were were reexamined for similarity to the enlarged [May 2002] NCBI nr DB as well as to the 141 microbial finished and unfinished genome sequences. These analyses yielded only few uniques.

3 The 127 ORFs were searched for their possible involvment in the pathogenicity of Y.pestis and similarity to B.melitensis and F.tularensis.

4 45 ORFs were selected for further analeses, 29 of them were chosen for mutagenesis.

5 A concordance analysis of S.typhi and Y.pestis genome yeilded 15 ORFs, which are common. most of them unknown.

Darko, Christian Asare **11/09/1998 5/08/2002**

1 By PCR method, Plasmodium falciparum FVO MSP-1(42) gene was cloned into an E. coli expression vector. DNA sequencing confirmed that the clone chosen for further studies is wild type. Expression of FVO MSP-1(42) gene was confirmed by Western blot.

2 Fermentation and purification conditions acceptable for human use were developed in the lab and transferred to the Dept. of Biologics, WRAIR, where the protein was produced and vialed. The protein was more than 95% pure by Coomassie blue stain gel.

3 The protein was highly immunogenic in mice and rabbits. Rabbit sera raised against FVO MSP-1(42) were inhibitory against P. falciparum growth in vitro.

4 In a vaccine trial conducted in CDC (Atlanta), Aotus monkeys were immunized separately with FVO MSP-1(42) or 3D7 MSP-1(42) and challenged with an erythrocytic stage FVO strain. The former was found to be highly protective while the latter was not.

5 A new construct of FVO MSP-1(42) gene has been made by synonymous mutation. This enhances expression and solubility of the protein. About 200-fold increase in expression has been achieved so far. This is due to enter GMP production this month.

Dillman, James F., III **11/29/1999 4/19/2002**

2 Exposure of cultured human epidermal keratinocytes (HEK) to sulfur mustard (SM) results in significant changes in protein expression.

3 Exposure of HEK to SM results in the activation of stress response pathways involved in inflammation.

4 Pharmacologic inhitition of these stress response pathways attenuates the SM-induced inflammatory response.

5 Exposure of HEK to SM results in the perturbation of proteins involved in cytoskeletal maintainance.

Dow, Geoffrey Stuart **8/07/2000 8/06/2002**

1 Global expression changes measured by microarrays suggested mitochondrial electron transport, phosphinositol metabolism and DNA repair may be neuronal targets of antimalarial endoperoxides.

2 Antimalarial endoperoxides were found to inhibit electron transport at the level of cytochrome oxidase at high concentrations, but RT-PCR could not confirm unequivocal regulation of mitochondrial genes by arteether in neuronal cells.

3 A power simulation utilizing published array data and novel p-value correction methods was used to determine theoretical false discovery rates and assess adequate sample sizes in required for variance-based analysis of microarray data.

4 At appropriate sample sizes, using RT-PCR to validate microarray data, and conventional antimalarial drugs as control compounds, actual false discovery rates were found to be comparable to theoretical error rates.

5 Transcriptional changes induced by antimalarial drugs, mefloquine and arteether, were investigated in neuronal cells using optimized microarry statistical analysis methods.

AMRMC- U.S. Army Medical Research and Materiel Comm:

Erwin, James Lawrence **8/10/1998 2/09/2002**

1 Investigated the role of anthrax lethal toxin upon the expression of pro-inflammatory cytokines by macrophages.

2 Demonstrated that lethal toxin inhibits rather induces cytokine expression.

3 Demonstrated that inhibition occurs at the level of transcription and signal transduction.

4 Characterized the effect of anthrax lethal toxin upon signal transduction in macrophages.

5 Characterized the response of toxin-resistant macrophages to infection by B. anthracis as compared to toxin-sensitive macrophages.

Fleming, Sherry D. **1/02/2001 1/01/2003**

1 Complement inhibitors can prevent local and systemic injury due to mesenteric ischemia/reperfusion (IR).

2 The anaphylotoxin C5a is critical for both local and systemic tissue damage.

3 The classical complement pathway is activated by natural antibodies in response to IR-induced damage.

4 IgM and IgG natural antibodies each contribute unique aspects of the tissue damage.

5 The natural antibody repertoire is altered in the absence of complement receptor 2 (CR2).

Grogan, Case Kyn **6/26/2000 8/09/2002**

1 Carried out a guinea pig vaccine protocol using the VEE-replicon protein expression system as a vaccine vector to test chimeric Ebola/Marburg glycoproteins (GP) as protective antigens against Ebola virus and Marburg virus.

2 Results obtained using Marburg/Ebola chimeric GP proteins indicated that glycoprotein protective epitope(s) resides within the GP2 subunit of the MBGV GP protein and at least partially within the GP2 subunit of the EBOV GP protein.

3 Cloned VEE replicons containing alternative chimeric Ebola and Marburg GP genes, with smaller portions of the GP2 region swapped between Ebola and Marburg GP genes, in order to narrow down the location of protective epitopes in the GP2 subunit.

4 Cloned VEE-replicons expressing the GP2 portion of either Ebola or Marburg GP protein in order to further investigate protective epitopes within the GP2 portion of GP for each virus. Live-virus challenge experiments are currently underway.

5 Carried out collaborations with two differend research groups regarding: effect of live Marburg and Ebola virus infection on the activation of cultured dendritic cells; binding specificity of live Ebola and Marburg virus on multiple cell types.

Guerrero-Ontiveros, Maria de Lourdes **2/16/1999** **8/13/2002**

1 Used Transposon TnphoA mutagenesis to identify potential Yersinia pestis genes which contribute to plague pathogenesis.

2 Screened the TnphoA fusions in Y. pestis KIM5 for temperature regulated membrane-bound or secreted proteins.

3 Identified nine thermoregulated chromosomal and plasmid genes encoding transmembrane and periplasmic proteins, five of them of unknown function.

4 Investigated the effect these phoA mutants may have on virulence in a macrophage infection assay.

5 Initiated the characterization of the function of one up-regulated, temperature-sensitive gene product designated ORF60.

Milosevits, Janos **7/03/2000** **7/02/2002**

1 Analysis of squalene reacting monoclonal mouse antibodies.

2 Detecting of squalene reacting natural antibodies in healthy and polyvaccinated humans by FACS.

3 Analysis of crossreactivity of squalene reacting antibodies.

4 Heat dependence binding of natural antibodies to squalene containing liposomes.

5 Analysis of rat and pig granulocyte oxidative burst, effected by liposomes.

Nair, Lalitha Punchayil Velayudhan **10/11/2000 10/10/2002**

1 Worked in the development of the purification of an important malaria vaccine target antigen PfAMA/E that (99% pure) was scaleable and transferable to GMP facility, and that induced high titre growth inhibitory antibodies in rabbits.

3 Purification protocol was used in the writing of Batch Production Record BPR-480, entitled "Preparation of a Bulk Lot Recombinant P. falciparum AMA1/E Protein Expressed in Escherichia coli, Origami Strain.

5 The data from this analysis will be part of an IND application to the FDA to use this protein as a vaccine in humans.

7 Cloned, expressed, purified and immunologically characterized all six subdomain constructs from ectodomain of AMA-1 in bacteria. It enabled to fine map the immunodominant regions of the whole molecule.

9 Erythrocyte binding activity of AMA-1 and the subdomain fragments is established from this study. This data may help to develop better AMA-1 based constructs for vaccine study.

Peng, Daizhi **1/05/1999 5/04/2002**

1 Culture directed antibiotics have obvious therapeutical effects on burn would sepsis rats within 3 days postburn.

2 The selection and dose of cultured antibiotics have influence on the efficacy of delayed antimicrobial therapy in burn wound sepsis.

3 Delayed piperacillin treatment mimic the clinical scenario where indicated antibiotic therapy is given and some patients still die of infection and organ dysfunction.

4 PDTC (NF-kB inhibitor) has no effect on the survival of sepsis rats in delayed piperacillin treatment, this might be related to the decreased serum level of IL-1 beta.

5 HMG-1 may be used as helpful markers of infection, tissue injury and inflammation.

AMRMC- U.S. Army Medical Research and Materiel Comm:

Riemenschneider, Jenny Lynn **3/01/2000 7/19/2002**

1 Baculovirus derived Ebola virus glycoproteins are partially protective in guinea pigs.

2 DNA vaccinated followed by protein boosts with Ebola virus glycoprotein is partially protective in guinea pigs.

3 DNA encoding the protective antigen of Anthrax is protective against spore challenge in a rabbit model.

4 DNA encoding the structural proteins of Venezuelan equine encephalitis virus is protective against infection in guinea pig.

5 DNA antigens from multiple infectious agents can be combined in a vaccine without decreased efficacy.

Roberson, Melinda Rice **5/02/2000 5/31/2002**

1 180 animals exposed to low-level sarin doses or saline (controls). Animals examined for signs of sarin intoxication, body temp, weight, EEG and general activity, and flinch threshold during the exposure period, and 3, 10, 30 and 100 days post-exposure.

2 Low-level sarin exposure results in a dramatic reduction of red blood cell (RBC) cholinesterase (ChE) activity in both the 0.2 LD50 and 0.4 LD50 groups (<40% and <20% of baseline, respectively), as compared to controls.

3 Significant reduction in brain CHE activity in the six brain regions examined in the 0.4 LD50, but not in the 0.2 LD50, sarin animals, compared to controls. There was a steady return to baseline by 100 days post-exposure in both RBC and brain ChE.

4 Significant increases in activity (total distance traveled and center time) in the 0.4 animals, and in rearing in both the 0.2 & 0.4 animals at 100 days post-exposure. A mild trend toward increased flinch threshold in exposed animals was observed.

5 No change in body weight or temperature (pre- and post-injection), or in stereotypical behavior at any time point examined. No sarin-related change in EEG activity during the exposure period; the analysis of post-exposure EEG records is ongoing.

Yuan, Huijun **4/09/2001 3/31/2002**

1 cDNA encoding 583-amino-acid mature bovine AChE was amplified and cloned into TA vector for sequencing.

2 Three expression plamids pBACgus3-ACHE (9.4kb), pBACgus9-ACHE (9.6kb), and pBACgus10-ACHE(9.7kb) were constructed and confirmed the correction by sequencing.

3 Two expression plasmid pBACgus3-ACHE and pBACgus10-ACHE were transfected the Sf9 cells with BacVector-3000 Triple Cut Virus DNA by Eufectin Transfection Reagent.

Zhang, Peng **2/01/1999 7/31/2002**

1 The molecular mechanism of CEES induced apoptosis was discovered. CEES can inhibit PKD1-Akt/Pkb pathway, and in turn to inhibit Bcl family expression and stimulate caspases expression.

2 A genomic DNA fragment, which contain promoter region of human GST1, GSTa1, were cloned and finished DNA sequencing analysis.

3 A series inhibitors of caspases were designed to synthesis based on the structure of human caspase 3, and the activators were designed to synthesis based on malaria caspase structure. Human caspase 3 was overexpressed in E coli system.

4 A novel apoptosis related gene, methionine aminopeptidase (MetAP), was cloned from malaria species. DNA sequencing of P. falciparum MetAP and P. bergheii MetAP were finished.

5 The noval apoptosis inhibiters, IAPs, were cloned from malaria species.

Zhu, Shuren **11/01/1999 10/31/2002**

1 A novel class of peptidomimetic antimalarial agents has been discovered.

2 Compounds exhibited potent in vitro and in vivo activity against malarial parasites.

THE NATIONAL ACADEMIES
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National Research Council
Associateship Programs

FINAL REPORT FORM

If you have downloaded this form, enter the information electronically.
Return this form directly to the NRC as an e-mail attachment or print out and mail.

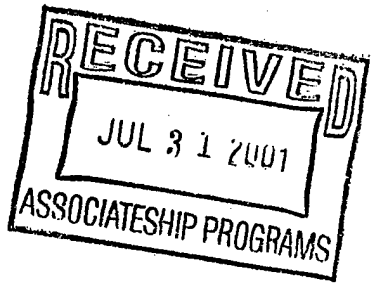
1) NAME

Allon, Nahum

2) DATE

July 3, 2001

3) *Program / Agency*	*or enter abbreviation*	*Lab / Center*	*Location*
AMRMC	**WRAIR**	**Biochmistry**	**Silver Spring MD**



4) DATES OF TENURE

August 1, 2000 -- to – July 31, 2001

5) NAME OF RESEARCH ADVISER

B. P. Doctor

6) IF YOU ARE ON LEAVE FROM A PROFESSIONAL POST, WILL YOU RETURN TO YOUR PREVIOUS EMPLOYER?

☒ Yes ☐ No

7) PROFESSIONAL AWARDS RECEIVED, SOCIETY OFFICES HELD DURING TENURE

8) PROFESSIONAL TRAVEL DURING TENURE **List locations and dates of travel to scientific meetings; group into domestic and foreign.**

Neurotoxicity meeting in Pucon Chile march 16-18 2001, Enzyme 2001 meeting in Orlando, Florida , May 13-18, 2001

9) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES **List location(s) and date(s).**

10) TITLE OF RESEARCH PROPOSAL

Induction of protection against Organophosphorous poisoning by liposome mediated delivery of the human Butyryl Cholinesterase gene to the lung

11) SUMMARY OF RESEARCH DURING TENURE **Itemize significant findings in concise form (25 words/250 characters each item.) Utilize concepts and key words.**

1) A plasmid containing human butyrylcholinesterase gene was successfully encapsulated in small unilamelar liposomes (150-200nm) with high efficiency (>60%) . The encapsulated liposomes were purified from the non encapsulated DNA.

2) Fusion peptides were designed synthetized and tested in in-vitro and in-vivo system. The fusion peptides are designed the to chenge their conformation due to changes in the pH. and thus disrupt the endosomal membrane and release the plasmid.

3) Six targeting peptides for lung cells were designed and tested for their selectivity to various lung cell lines.

4) Various linkers for the conjugation between the peptides and the liposomes were tested. The direct linkage to the phospholipid was finally adopted for further research

5) An animal model using an otoscopic intra-trachealy instillation of liposomes containing plasmid were tested and adopted for the in-vivo testing of the delivery system.

12) RESEARCH IN PROGRESS **Briefly describe in 100 words or less.**

A gene delivery system based on liposomes specially formulated for targeting of lung cells was designed and formulated. The efficacy of the targeting system as well as the efficacy of the fusion peptide has been tested and its efficiency established. We are now in the process of testing and evaluating the delivery system in the in-vivo mice model. Changes are required to be

made in the plasmid since only poor expression was detected using the in-vitro cell line model. We are now considering the use of additional, different plasmid system in order to validate the efficacy of the delivery system.

13) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH
Provide complete citation(s) including author(s), full name of journal, volume number, page number(s), year of publication.

(a) Publications in peer-reviewed journals:

(b) Books or book chapters:

(c) Manuscripts in preparation, manuscripts submitted:

14) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES
Provide complete reference with author(s), title, abstract/proceeding citation, meeting name, location. Group into domestic and foreign.

Nahum Allon, Clarence A. Broomfield and Bhupendra P. Doctor. Induction of protection against Organophosphate poisoning by liposome mediated delivery of human butyrylcholinesterase (HuBChE) gene to the lungs. In International symposium on applications of enzymes in chemical and biological defense. Orlando (UAS) May 2001

15) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH
Provide titles, authors, and dates of applications.

16) NEW POSITION STATUS/CATEGORY **Please indicate only one.**

- ☒ *Research -- National Government* (U.S. or Foreign)
- ☐ *Administration -- U.S. Govt.* (Fed., State, or Local)
- ☐ *Continuation at Host Lab/Center*
  Abbreviate Host Lab/Center: IIBR
- ☐ *College/University*
- ☐ *Postdoctorate*
- ☐ *Self Employment*
- ☐ *Non Profit*
- ☐ *Industry*
- ☐ *Other*
  Please specify: _____

17) NEW POSITION TITLE AND NAME (not address) OF ORGANIZATION

Senior researcher in Israel Institute of Biological Research

18) FORWARDING ADDRESS **(to which your tax statement will be mailed)**

Nahum Allon Dolev 9 Macabim 71908 Israel

19) APPRAISAL OF THE ASSOCIATESHIP PROGRAM
Please evaluate each of the following on a scale of 1 (poor) to 10 (excellent):

10 a) Of what value was this experience to your career?

10 b) What is your evaluation of your experience in the laboratory?

10 c) What is your evaluation of your interaction with the NRC?

Please provide any additional comments on the usefulness of the Associateship Program to you, including suggestions for improvements.

I had a very fruitful year. Keep on doing the good job.

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1000 Thomas Jefferson Street, NW
Washington, DC 20007

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National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Cohen	**Sara**	

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
3/10 HaEshel St., Kfar-Saba 44235	**972-9-7650945**
3) *Today's Date*	*Dates of Tenure*
July 30, 2002	from **August 1, 2001** to **August 1, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**AMRIID**	**WRAIR CD&I**

5) *NAME OF RESEARCH ADVISER*

Luther E. Lindler

6) *TITLE OF RESEARCH PROPOSAL*

Universal ORF plasmid library for directet mutagenesis of potential virulence genes in Y.pestis, F.tularensis and B.melitensis bacteria

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Substractive genome [chromosome] analysis of Y.pestis done at the end of 2001, yielded 127 unique ORFs (done by the bioinformatics group at IIBR)

2) The selected ORFs were were reexamined for similarity to the enlarged [May 2002] NCBI nr DB as well as to the 141 microbial finished and unfinished genome sequences. These analyses yielded only few uniques

3) The 127 ORFs were searched for their possible involvment in the pathogenicity of Y.pestis and similarity to B.melitensis and F.tularensis

4) 45 ORFs were selected for further analeses, 29 of them were chosen for mutagenesis

5) A concordance analysis of S.typhi and Y.pestis genome yeilded 15 ORFs, which are common. most of them unknown.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The genome sequence of Y.pestis was published as well as that of S.typhi,. A subtractive analysis of these genomes was done. Further cycles of subtraction of bacterial genes, which were present in the nonredundent NCBI database and share sequence similarity, excluding genes of B.melitensis and F.tularensis, yielded 127 ORFs potentially unique for Y.pestis or these pathogens. Analysis of these ORFs included search for Conserved Domains, Cluster Orthologous Groups affiliation and Biochemical pathways, which may be relevance to virulence. Possible role in mammalian signal transduction pathways and similarity to virulence genes of bacteria as well as the locations of the ORFs in the genome were some of the criteria for choosing ORFs for further analysis. Out of those, 29 have many of the chosen characteristics and were selected for targeted mutagenesis and experimental virulence analyses, analyses to be done at Dr Lindler's lab and and at my lab back at IIBR.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Sara Cohen2 ,Anat Zvi2 ,Naomi Ariel2 Sydney H. Lee1 ,Avigdor Shafferman2 and Luther E. Lindler1*
Department of Bacterial Diseases, WRAIR, Silver Spring, MD and Department of Biochemistry and Molecular Genetics, IIBR, Ness-Ziona, Israel2
Yersinia pestis as an Emerged Pathogen; A Comparative Bioinformatics Approach
CB Defense Conference in November 2002 ,Hunt Vally ,MD

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

IIBR, Ness-Ziona, 74100, Israel

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☒ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

8 Short-term value: development of knowledge, skills, and research productivity
Comments:

___ Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

8 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

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FINAL REPORT

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1) *Associate Last or Family Name*	*First Name*	*M.I.*
Darko	**Christian**	**A**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
8510 16th Street, Apt 702, Silver Spring, MD 20910	**301-319-9337/christian.darko@na.amedd.army.mil**
3) *Today's Date*	*Dates of Tenure*
May 8, 2002	from **November 9, 2002** to **May 8, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**Immunology**

5) *NAME OF RESEARCH ADVISER*

Dr. Jeffrey Lyon

6) *TITLE OF RESEARCH PROPOSAL*

Requirement for replicating native structure to induce protective immunity against malaria parasites with recombinant MSP-1(42) in Aotus monkeys

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) By PCR method, Plasmodium falciparum FVO MSP-1(42) gene was cloned into an E. coli expression vector. DNA sequencing confirmed that the clone chosen for further studies is wild type. Expression of FVO MSP-1(42) gene was confirmed by Western blot.

2) Fermentation and purification conditions acceptable for human use were developed in the lab. and transferred to the Dept of Biologics, WRAIR, where the protein was produced and vialed. The protein was more than 95% pure by Coomassie blue stain gel.

3) The protein was highly immunogenic in mice and rabbits. Rabbit sera raised against FVO MSP-1(42) were inhibitory against P. falciparum growth in vitro.

4) In a vaccine trial conducted in CDC (Atlanta)., Aotus monkeys were immunized separately with FVO MSP-1(42) or 3D7 MSP-1(42) and challenged with an erythrocytic stage FVO strain. The former was found to be highly protective while the latter was not.

5) A new construct of FVO MSP-1(42) gene has been made by synonymous mutation. This enhances expression and solubility of the protein. About 200 fold increase in expression has been achieved so far. This is due to enter GMP production this month.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The Aotus monkeys which were used in the vaccine trial were rechallenged on May 7, 2002 with a heterologous parasite strain. The purpose is to find out (a) the duration of immunity against the vaccine candidates and challenge & (b) Is immunity strain specific? Samples obtained during the vaccine trials in Aotus monkeys will be analyzed by ELISA, Growth Inhibition Assay and Processing Inhibition Assay. Specificity of antibodies raised against the various fragments (p33 and p19, as well EGF domains) of the MSP-1(42) [above] will be analyzed by ELISA. GMP Fermentation and purification conditions for clinical grade material of the new FVO MSP-1(42) construct are being developed in the laboratory. Large scale GMP fermentation and purification will be conducted by the Dept of Biologics, WRAIR in June and August 2002, respectively. Analyses [safety, immunogenicity, etc] of FVO MSP-1(42) vaccine will be conducted immediately following production. Clinical trials in humans will follow soon.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

At least, two manuscripts are in preparation awaiting the final analyses of the serum samples from the vaccine trial in Aotus monkeys and the approval of a patent/invention disclosure filed on March, 2002.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

Invention Disclosure/ Patent
WRAIR 02/09

MRMC WRAIR 02-__ "Development of an E.coli expressed recombinant MSP-142 (FVQ) as a vaccine for Malaria", Evelina Angov, Christian A. Darko, Jeffrey A. Lyon, submitted on March 18, 2002

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

N/A

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *NEW POSITION TITLE*

Research Associate

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Walter Reed Army Institute of Research, Department of Immunology, Bldg 503 Room 3W76, Robert Grant Avenue, Silver Spring, MD 20910

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center WRAIR
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

___ Short-term value: development of knowledge, skills, and research productivity
Comments:
10

I have learnt a lot by way of science during my tenure. Many new techniques were learnt and many of the things learnt in my graduate studies were put into use. I had the opportunity of reading and interpreting scientific literature with researchers both at WRAIR and outside.

___ Long-term value: how your NRC Associateship award affected your career to date
Comments:
10

I believe the experience gained here will pave way for many opportunities in my scientific career.

Administrative Support

9 Quality of the support you received from the federal Laboratory

9 Quality of the support you received from the NRC staff

Comments:

Except some few administrative problems I had during the first year, I think the quality of support was excellent.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

I suggest the following:-

(1) (a) Formation of NRC Associates Association at the various laboratories (e.g. WRAIR). This will allow associates to know each other and if possible establish working relationship or collaboration for the future.

(b) Associates can get more information about life situation in the areas in which they live from other associates who may know the area better.

(c)An association for associates may help answer questions related to taxes, health insurance, etc. which may be new to associates who will be coming to the USA for the first time.

(2) More visits by the Program Headquarters to the various laboratories will be appreciated by associates, I think. At the moment, there is one per year. In the absence of a visit by the program (headquarters), meetings can be organized by the laboratory representatives to discuss issues affecting associates.

(3) More training can be achieved by researchers from developing countries around the world if information about the program are sent out to these areas. I think, more countries will be covered if associates are asked to provide list of research institutions where potential associates can be reached. A couple of days ago, I did email addresses of institutes of some countries in Africa to Dr. Judy Nyquist.

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Dillman III	**James**	**F**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
4344 Horner Lane Belcamp, MD 21017	**410-272-5481**
3) *Today's Date*	*Dates of Tenure*
April 19, 2002	from **November 29, 1999** to **April 19, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**USAMRICD**	**Applied Pharmacology Branch**

5) *NAME OF RESEARCH ADVISER*

John J. Schlager, Ph.D.

6) *TITLE OF RESEARCH PROPOSAL*

Proteomic Analysis of Sulfur Mustard Toxicity

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Exposure of cultured human epidermal keratinocytes (HEK) to sulfur mustard (SM) results in significant changes in protein expression.

2) Exposure of HEK to SM results in the activation of stress response pathways involved in inflammation.

3) Pharmacologic inhibition of these stress response pathways attenuates the SM-induced inflammatory response.

4) Exposure of HEK to SM results in the perturbation of proteins involved in cytoskeletal maintainance.

5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Proteomics technologies are being employed to identify and characterize the molecular and cellular response of human epidermal keratinocytes to the toxic effects of sulfur mustard exposure. It is expected that these studies will result in the identification and characterization of alterations in protein expression levels, post-translational modifications of proteins, and protein function in response to HD exposure. The analytical techniques that comprise the emerging field of proteomics are powerful tools well suited for these studies. This information will be vital in identifying the specific cellular pathways that are perturbed by HD exposure, and the specific cellular pathways that the cell utilizes to cope with exposure to HD. These results should provide significant insight into the mechanism of HD toxicity and can be applied in future research directed toward identifying potential targets for therapeutic intervention.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Cytokine release induced by sulfur mustard exposure is mediated by the p38 MAP kinase signaling pathway. Dillman III, J.F., McGary, K.L. and Schlager, J.J., in preparation.

Exposure to sulfur mustard induces the formation of keratin protein aggregates. Dillman III, J.F., McGary, K.L., and Schlager, J.J., in preparation.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Dillman, J.F. III and J.J. Schlager. 2000. Identification of protein profile changes in sulfur mustard toxicity using proteomic approaches. 2000 Medical Defense Biosciene Review. p. 139. Bioscience Review 2000, June 4-9, Hunt Valley, MD.

Schlager, J.J., H.R. Benjamin, C.F. Levine, D.P. Avery, A.D. Dodds, C. Nalls, J.H. Clark, E.G. Midboe, and J.F. Dillman III. 2000. Sulfur mustard-induced macromolecular changes in the human keratinocyte: use of genomic expression and proteomic approaches to analyze temporal sulfur mustard toxicity. 2000 Medical Defense Bioscience Review. p. 113. Bioscience Review 2000, June 4-9, Hunt Valley, MD.

Dillman, J.F. III, and J.J. Schlager. Proteomic analysis of sulfur mustard toxicity. Platform presentation at the United States Army Medical Research and Material Command: Genomics Workshop. Walter Reed Army Institute of Research, Silver Spring, MD. February 22-23, 2001.

Dillman, J.F. III, and J. J. Schlager. 2001. Identification of protein profile changes in sulfur mustard exposed keratinocytes. Toxicological Sciences. 60(1):138. Platform presentation at Society of Toxicology Annual Meeting, March 25-29, 2001.

Dillman, J.F. III, K.L. McGary, and J.J. Schlager. 2001. Proteomic analysis of sulfur mustard-induced protein changes in human epidermal keratinocytes. Platform presentation at United States Army Medical Research and Materiel Command/United States Army Medical Research Institute of Chemical Defense Chemical Warfare Agent Toxicogenomics Conference, November 9, 2001.

Dillman, J.F. III, K.L. McGary, J.H. Clark, C.R. Braue, and J.J. Schlager. Upregulation of Cytokine Release by Sulfur Mustard Exposure is Mediated by the p38 MAP Kinase Signaling Pathway. Society of Toxicology Annual Meeting, March 17-21, 2002.

Dillman, J.F. III, K.L. McGary, and J.J. Schlager. Exposure of human epidermal keratinocytes to sulfur mustard induces the formation of high molecular weight protein aggregates containing keratin 14 and keratin 5. 2002 Medical Defense Bioscience Review, June 2-7, 2002, Hunt Valley, MD, submitted.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Society of Toxicology In Vitro Speciality Section Award.

14) *NEW POSITION TITLE*

Research Chemist, Principal Investigator

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☒ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

8 Short-term value: development of knowledge, skills, and research productivity

Comments:

9 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

9 Quality of the support you received from the federal Laboratory

9 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

US Postal Service mailing address	fax	Express Delivery address
Research Associateship Programs [TJ 2114]	202 – 334 – 2759	Research Associateship Programs [Suite 200]
National Research Council		National Research Council
2101 Constitution Avenue NW	website	1000 Thomas Jefferson Street, NW
Washington, DC 20418	www.national-academies.org/rap	Washington, DC 20007
n:\AO Forms	NRC ASSOCIATESHIP OFFICE	Rev. 10/2001
ID#	cc:	cost-center #

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Dow	Geoffrey	S

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
1701 East West Highway APT 120, Silver Spring, MD, 20910	301-319-9009 geoffrey.dow@na.amedd.army.mil
3) *Today's Date*	*Dates of Tenure*
July 16, 2002	from August 6, 2000 to August 6, 2002

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	WRAIR	Exp Therapeutics/Parasitology

5) *NAME OF RESEARCH ADVISER*

Dr Thomas H Hudson

6) *TITLE OF RESEARCH PROPOSAL*

Analysis of Surrogate Markers Associated With Induced Neurotoxicity From Antimalarial Endoperoxides.

7) *SUMMARY OF RESEARCH DURING TENURE* Itemize significant findings in concise form, utilizing key concepts/words.

1) Global expression changes measured by microarrays suggested mitochondrial electron transport, phosphinositol metabolism and DNA repair may be neuronal targets of antimalarial endoperoxides.

2) Antimalarial endoperoxides were found to inhibit electron transport at the level of cytochrome oxidase at high concentrations, but RT-PCR could not confirm unequivocal regulation of mitochondrial genes by arteether in neuronal cells.

3) A power simulation utilising published array data and novel p-value correction methods was used to determine theoretical false discovery rates and assess adequate sample sizes required for variance-based analysis of microarray data.

4) At appropriate sample sizes, using RT-PCR to validate microarray data, and conventional antimalarial drugs as control compounds, actual false discovery rates were found to be comparable to theoretical error rates.

5) Transcriptional changes induced by two antimalarial drugs, mefloquine and arteether, were investigated in neuronal cells using optimized microarray statistical analysis methods.

8) *RESEARCH IN PROGRESS* Describe in no more than 100 words.

Current focus of research is the follow up investigation of transcriptional changes induced in primary (not cell lines) neuronal cells by arteether and mefloquine. With respect to arteether, this has first involved defining a concentration/time endpoint in terms of changes in the transcription induction of specific biochemical markers, in particular, antioxidant enzymes. Once these endpoints have been determined, additional array studies will be conducted in primary neuronal cells. With respect to mefloquine, in vitro array studies with the NG108 neuronal cell line have demonstrated the upregulation of proapoptotic transcription factors. Additional array studies are being conducted in primary neuronal cells to determine whether similar transcriptional changes are observed in a more physiologically relevant system.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

NA

b) Books, book chapters, other publications

NA

c) Manuscripts in preparation, manuscripts submitted

1. Dow, G.S. 2002. Empirical Approaches To Determining Adequate Sample Sizes and P-Value Correction Methods for Variance-Based Analysis of Expression Data. Submitted to Journal of Computational Biology.
2. Li, Q.G.*, Si Y.Z., Lee P., Wong E., Xie L.H., Kyle D.E and Dow, G.S. 2002. Efficacy comparison of intravenous artelinate and artesunate in Plasmodium berghei-infected Sprague-Dawley rats. Submitted to Parasitology.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

NA

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

G.S. Dow, K.M. Kopydlowski, M. Vahey, M.E. Nau, R.K. Martin and T.H. Hudson. 2001. Microarray investigation of global gene expression changes induced in rat neuronal cell lines and primary cell cultures by artemisinin derivatives. IXth International Congress of Toxicology, Brisbane, Australia, July 8-12, 2002.

Domestic

1. Hudson, T.H., Dow, G.S., Kopydlowski, K.M., Vahey, M., Nau, M.E., Gwin, C.A. and Martin, R.K. 2000. Evaluation of Affymetrix rat toxicology U34 arrays for preliminary assessment of mammalian cell toxicity from compounds identified as promising antimalarials. Woods Hole Molecular Parasitology Meeting XI, Woods Hole MA, Sept 17-21, 2002.
2. Dow, G., Kopydlowski, K. M., Vahey, M. and Hudson, T.H. 2002. Mitochondrial enzymes as neuronal targets of artemisinin compounds. Drugs Against Tropical Protozoan Parasites: Target Selection, Structural Biology, and Rational Medicinal Chemistry. Keystone Symposium, Keystone CO, March 3-8, 2002.
3. Dow, G.S. 2002. Empirical approaches to determining adequate sample sizes and p-value correction methods for variance-based analysis of expression data. Woods Hole Molecular Parasitology Metteing XII, Woods Hole MA, Sept 22-26, 2002.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

G.S. Dow. Microarray investigation of global gene expression changes induced in rat neuronal cell lines by arteether. Invited speaker at the Australian Army Malaria Institute, Brisbane, Australia, July 10, 2001.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *NEW POSITION TITLE*

Genomics Laboratory Investigator

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Walter Reed Army Institute of Research

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

8 Short-term value: development of knowledge, skills, and research productivity
Comments:
Provided the opportunity to acquire new skills and training not available in home country.

8 Long-term value: how your NRC Associateship award affected your career to date
Comments:
Facilitated career transition from small laboratory as a PhD student to a more permanent position in a world class, international research institute.

Administrative Support

8 Quality of the support you received from the federal Laboratory

5 Quality of the support you received from the NRC staff

Comments:

Generally NRC staff answered questions adequately, however the processing time for general paperwork was too long. In particular, processing time for travel applications and reimbursement was unnecessarily slow. Also one weakness of the NRC is that there is a singular lack of tax/financial advice offered to Associates.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

Refer to above

US Postal Service mailing address
Research Associateship Programs [TJ 2114]
National Research Council
2101 Constitution Avenue NW
Washington, DC 20418

fax
202 – 334 – 2759

website
www.national-academies.org/rap

Express Delivery address
Research Associateship Programs [Suite 200]
National Research Council
1000 Thomas Jefferson Street, NW
Washington, DC 20007

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

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1) *Associate Last or Family Name*	*First Name*	*M.I.*
Erwin	**James**	**L**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
6262 North Steamboat Way	**301-865-6302; James.Erwin@det.amedd.army.mil**
3) *Today's Date*	*Dates of Tenure*
March 4, 2002	from **August 10, 1998** to **February 9, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
	AMRMC	**USAMRIID**

5) *NAME OF RESEARCH ADVISER*

Tran C. Chanh

6) *TITLE OF RESEARCH PROPOSAL*

The Subversion of Macrophages by Anthrax Lethal Toxin

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Investigated the role of anthrax lethal toxin upon the expression of pro-inflammatory cytokines by macrophages.

2) Demonstrated that lethal toxin inhibits rather induces cytokine expression.

3) Demonstrated that inhibition occurs at the level of transcription and signal transduction.

4) Characterized the effect of anthrax lethal toxin upon signal transduction in macrophages.

5) Characterized the response of toxin-resistant macrophages to infection by B. anthracis as compared to toxin-sensitive macrophages.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The characterization of anthrax lethal toxin's effect upon signal transduction as well as the differences in response of toxin-resistant and toxin-sensitive cells is part of an ongoing project at USAMRIID. I have begun working at USAMRIID as a contractor and will be applying for a permanent position here. My expertese in cell biology and innate immunity is leading to other collaborations at USAMRIID as well. I am not at liberty to go into any details about those, however.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

J. L. Erwin, L. M. DaSilva, S. F. Little, A. M. Friedlander, S. Bavari and T. C. Chanh. "Macrophage-derived cell lines do not express pro-inflammatory cytokines after exposure to Bacillus anthracis lethal toxin." (2001) Infection and Immunity 69:1175-1177.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

J. L. Erwin and T. C. Chanh. "Inhibition of MAP kinase isoforms in macrophage cell lines after exposure to anthrax lethal toxin"

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

1. J. L. Erwin, S. F. Little, A. M. Friedlander and T. C. Chanh. "The interactions of macrophages with anthrax lethal toxin revisited: effects on pro-inflammatory cytokine expression" 1999 Spring Research Festival.
2. J. L. Erwin, L. M. DaSilva, S. Bavari, S. F. Little, A. M. Friedlander, and T. C. Chanh. "Macrophage-derived cell lines do not express pro-inflammatory cytokines after exposure to anthrax lethal toxin" 2000 ASM General Meeting.
3. J. L. Erwin, L. M. DaSilva, S. Bavari, S. F. Little, A. M. Friedlander, and T. C. Chanh. "B. anthracis lethal toxin inhibits cytokine transcription in macrophages" 2000 Spring Research Festival.
4. J. L. Erwin and T. C. Chanh. "Inhibition of MAP kinase isoforms in macrophage cell lines after exposure to anthrax lethal toxin" 2001 ASM General Meeting.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

November 14, 2001 "The Subversion of Macrophages by B. anthracis Lethal Toxin" GWU, Washington, DC

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Best poster, 2000 Spring Research Festival, Fort Detrick

14) *NEW POSITION TITLE*

Microbiologist/Immunologist

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

contractor at USAMRIID via CRM (Clinical Research Management)

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center **USAMRIID**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

9 Short-term value: development of knowledge, skills, and research productivity
Comments:
The atmosphere at USAMRIID was far more collegial and supportive than any experience I've had in academia. With the emphasis on applied science, as well as the mission to provide vaccines, therapies and diagnostics for the protection of US forces I feel that my own research philosophy was allowed to blossom.

9 Long-term value: how your NRC Associateship award affected your career to date
Comments:
As I have high confidence of continuing at USAMRIID as a permanent employee it seems to have been an excellent stepping stone. More importantly, I have developed research skills and perspectives that are unique to this environment. i have been given the opportunity to focus my interests in ways unanticipated. For these reasons I cannot imagine having made a better career move than the one I have taken.

Administrative Support

8 Quality of the support you received from the federal Laboratory

8 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Fleming	**Sherry**	**D**

2) *FORWARDING Address* (for tax statement / final stipend check)	*FORWARDING Phone(s) and E-Mail* (if known)
11503 Regnid Dr. **Silver Spring, MD 20902**	**phone: (301) 319-7359** **phone: (301) 942-9440** **e-mail: sfleming@usuhs.mil**
3) *Today's Date*	*Dates of Tenure* **from January 2, 2001 to January 1, 2003**

4) *Agency*	*Laboratory* or *NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR/Tsokos** / **NASA Ctr**	**Cellular Injury/MCR**

5) *NAME OF RESEARCH ADVISER*
George Tsokos

6) *TITLE OF RESEARCH PROPOSAL*

Role of natural antibodies and complement inhibitors in mesenteric ischemia-reperfusion injury

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **Complement inhibitors can prevent local and systemic injury due to mesenteric ischemia/reperfusion (IR)**
2) **The anaphylotoxin C5a is critical for both local and systemic tissue damage**
3) **The classical complement pathway is activated by n atural antibodies in response to IR-induced damage.**
4) **IgM and IgG natural antibodies each contribute unique aspects of the tissue damage.**
5) **The natural antibody repertoire is altered in the absence of complement receptor 2 (CR2).**

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

I am continuing the CR2 studies to determine the antigen for the natural antibody recognition of ischemic tissue. In addition, the cell type that is secreting the natural antibodies and the recruitment of these cells to the local area are being investigating. The C5 project is being extended to determine the actual involvement of integrin a4 and VCAM in local and systemic injury.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

Fleming, S.D., Lambris, J.D., T.Shea-Donohue and G.C. Tsokos. 2002. C5 is critical for the mesenteric ischemia/reperfusion-induced local and remote organ injury. 2002. Clinical Immunol. In Press.

Fleming, S.D., T.Shea-Donohue, J.M. Guthridge, L. Kulik, T.J. Waldschmidt, M.G. Gipson, G.C. Tsokos and V.M. Holers. 2002. Mice deficient in complement receptors 1 and 2 lack a tissue injury-inducing subset of the natural antibody repertoire. J. Immunol.169:2126-2133.

Fleming, S.D., B. Starnes, J.G. Kiang, A. Stojadinovic, G.C. Tsokos, and T.Shea-Donohue. 2002.Heat stress protection against mesenteric ischemia/reperfusion -induced alterations in intestinal mucosa in rats. J. Applied Physiol. 92:2600-2607.

Rehrig, S., S.D. Fleming, J. Anderson, J.M. Guthridge, J. Rakstang, C. McQueen, V.M. Holers, G.C. Tsokos, and T.Shea-Donohue. 2001. Complement inhibitor, Crry-Ig attenuates intestinal damage after the onset of mesenteric ischemia/reperfusion injury in mice. J. Immunol. 167: 5921-5927.

b) Books, book chapters, other publications

Fleming, S.D. and G.C. Tsokos. 2001. Complement Inhibitors in Rheumatic Diseases in Modern therapeutics in Rheumatic Diseases. Pg 443-452. Ed. G.C. Tsokos, Humana Press, Totowa, NJ.

c) Manuscripts in preparation, manuscripts submitted

Karpel-Massler, G., Fleming, S.D., Kirschfink, M., Tsokos, G.C. 2002. Human C1 esterase inhibitor attenuates murine mesenteric ischemia/reperfusion induced local organ injury. Submitted. 2002.

Fleming, S.D., Lambris, J.D., and G. Tsokos. C5a-mediated mesenteric ischemia/reperfusion injury is independent of polymorphonuclear neutrophils.

Fleming, S.D., Anderson, J., Rehrig, S., Wilson, F., .Shea-Donohue, T., and G. Tsokos. Systemic effects of Crry-Ig after mesenteric ischemia/reperfusion.

Anderson, J. Fleming, S.D., Rehrig, S., Tsokos, G., Shea-Donohue, T and M. Basta. Intravenous immunoglobulin attenuates mesenteric ischemia-reperfusion injury

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

None

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

International Complement Society Meeting, Palermo, Italy, Sept. 2002. Fleming, SD, Lambris, JD, Shea-Donohue, T, and Tsokos, GC. C5a is responsible for the mesenteric ischemia/reperfusion-induced local and remote organ injury. Poster Preseentation

International Complement Associated Disease, Animal Models and Therapeutic Workshop. Santorini, Greece. 2001. Fleming, SD, Lambris, JD, Shea-Donohue, T. and Tsokos, GC. C5a is responsible for the mesenteric ischemia/reperfusion-induced local and remote organ injury Abstract #20. Oral Presentation.

Domestic

AAATAC meeting, Florida, Sept. 2002, Oral Presentation.

AAATAC meeting, Florida, Sept. 2001
The C5a fragment of C5 is critical of the mesenteric ischemia/reperfusion-induced local and remote organ injury, Fleming, SD, Lambris, JD, Shea-Donohue, T and Tsokos, GC.

FOCIS Meeting, Boston, MA, 2001 Poster Presentation
C5 inhibitors prevent mesenteric ischemia/reperfusion induced injury. by Fleming, SD, Lambris, JD, Shea-Donohue, T. and Tsokos, GC. Clinical Immunology 99:175 Abstract #221.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

Research seminar. Dept. Pathology and Laboratory Medicine, Univ. Penn, Philiadelphia, PA. March 2002

Immunology section, 4 lectures, Structure and Function of Organ Systems, Uniformed Services University of the Health Sciences, Bethesda, MD April 2002.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *POST-TENURE POSITION TITLE*

CRM Investigator

15) *POST-TENURE ORGANIZATION* **Provide name and city of organization.**

Clinical Research Management
Silver Spring, MD 20910

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- [ ] Remain at Host Agency as Permanent Employee
- [x] Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center WRAIR
- [ ] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory
- [ ] Research/Teaching at US College/University
- [ ] Research/Teaching at Foreign College/University
- [ ] Research/Administration in Industry
- [ ] Research/Admin in Non-Profit Organization
- [ ] Postdoctoral Research
- [ ] Self Employed
- [ ] Other: specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following**

Your experience as a NRC Research Associate in this federal Laboratory 1 (poor) to 10 (excellent)

10 Short-term value: development of knowledge, skills, and research productivity
Comments:

10 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support **1 (poor) to 10 (excellent)**

9 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff **(Leave blank, if not applicable - e.g., NIST)**
Comments on both/either:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

US Postal Service mailing address
Research Associateship Programs
National Research Council
500 Fifth Street, NW [GR 322A]
Washinton, DC 20001

fax
202 – 334 – 2759
rap@nas.edu
website
www.national-academies.org/rap

Express Delivery address
Research Associateship Programs
National Research Council
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Grogan	**Case**	**C**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
1717 Loma Vista St. Pasadena, CA 91104	**ckcgrogan@yahoo.com**
3) *Today's Date*	*Dates of Tenure*
August 5, 2002	from **June 26, 2000** to **August 9, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**AMRIID**	**Virology**

5) *NAME OF RESEARCH ADVISER*

Dr. Alan L. Schmaljohn

6) *TITLE OF RESEARCH PROPOSAL*

Characterization of Marburg and Ebola virus glycoprotein domains important in vaccine efficacy

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Carried out a guinea pig vaccine protocol using the VEE-replicon protein expression system as a vaccine vector to test chimeric Ebola/Marburg glycoproteins (GP) as protective antigens against Ebola virus and Marburg virus.

2) Results obtained using Marburg/Ebola chimeric GP proteins indicated that glycoprotein protective epitope(s) resides within the GP2 subunit of the MBGV GP protein and at least partially within the GP2 subunit of the EBOV GP protein.

3) Cloned VEE replicons containing alternative chimeric Ebola and Marburg GP genes, with smaller portions of the GP2 region swapped between Ebola and Marburg GP genes, in order to narrow down the location of protective epitopes in the GP2 subunit.

4) Cloned VEE-replicons expressing the GP2 portion of either Ebola or Marburg GP protein in order to further investigate protective epitopes within the GP2 portion of GP for each virus. Live-virus challenge experiments are currently underway.

5) Carried out collaborations with two differend research groups regarding: effect of live Marburg and Ebola virus infection on the activation of cultured dendritic cells; binding specificity of live Ebola and Marburg virus on multiple cell types.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Examination of the protective efficacy of the GP2-only portion of the GP protein (versus full-length GP) is currently being assayed by immunization of guinea pigs with VEE replicons which express either the Marburg or Ebola GP2 subunit only. Animals are currently receiving 3 doses of 10^6 focus forming units of replicon vaccine 28 days apart. The Marburg GP2-immunized animals will be challenged with Marburg virus and the Ebola GP2-immunized animals will be challenged with Ebola virus. This part of the study is being carried out in collaboration Dr. Mike Hevey, for inclusion in the manuscript in preparation, before submission.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Simmons, G., Reeves, J.D., Grogan, C.C., Vandenberghe, L.H., Baribaud, F., Whitbeck, J.C., Burke, E., Buchmeier, M.J., Soilleux, E.J., Riley, J.L., Doms, R.W., Bates, P., and S. Pohlmann. 2002. DC-SIGN and DC-SIGNR bind Ebola glycoproteins and enhance infection of macrophages and endothelial cells. Virology. Accepted (August 2002) for publication.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Bosio, C.M., Aman, M.J., Grogan, C., Hogan, R., Ruthel, G., Negley, D., Mohamadzadeh, M., Bavari, S., and A. Schmaljohn. 2002. Ebola and Marburg virus infections of dendritic cells undermine innate immune responses. Submitted.

Grogan, C.C., Negley, D., Geisbert, J., Schmaljohn, A.L., and M. C. Hevey. 2002. Chimeric Ebola/Marburg glycoproteins expressed from an Alphavirus replicon as a vaccine approach indicate protective epitopes in the GP2 subunit. In preparation

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

Prepared final patent application, filed by Pratt and Associates, Inc., Potomac, MD, on behalf of USAMRIID 31 January 2002: Chimeric Ebola/Marburg Glycoprotein as a Vaccine For Filoviruses, Case C. Grogan, Michael C. Hevey, and Alan L. Schmaljohn. (PCT/US02/03339 filed 1/31/02 Entitled "Chimeric Filovirus Glycoprotein")

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Chimeric Ebola/Marburg glycoproteins expressed from an Alphavirus replicon as a vaccine approach. Case C. Grogan, Mike C. Hevey, Steve Harrison, Diane Negley, Joan Geisbert, and Alan L. Schmaljohn
1. Oral presentation made at the 20th Annual Meeting for the American Society for Virology, Madison, WI, July 21-25, 2001.
2. Poster presentation at the NCI-Ft. Detrick Spring Research Festival, Frederick, MD, May 16-17, 2001.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

1. American Society for Virology Joel M. Dalrymple Memorial Award for Outstanding Presentation of Research, 20th Annual American Society for Virology meeting, Madison, WI, July 2001
2. National Cancer Institute -Frederick/Ft. Detrick Spring Research Festival poster presentation award winner, May, 2001

14) *NEW POSITION TITLE*

no position determined yet

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

currently job hunting in new home location (relocating for spouse)

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☒ Other **Please specify** nd

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity
Comments:
My NRC tenure has provided me excellent opportunities to learn and develop new research skills/techniques that I will use in my future work.

Comments:

Even though I do not have my next research job lined up yet, I am confidant the NRC associateship award, and the work I have accomplished (presentations, papers, patent) will be a very positive aspect of my CV/resume.

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff

Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

No complaints - program well run!

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Guerrero-Ontiveros	**Maria de Lourdes**	

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Ruperto L. Paliza No. 640 Sur. Culiacan, Sin. 80200 Mexico	**Phone: 52/6677/16 35 80** **Phone: 52/6677/16 62 19** **E-mail: lourdesgo@hotmail.com**
3) *Today's Date* **September 11, 2002**	*Dates of Tenure* from **February 15, 1999** to **August 14, 2002**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**CD&I**

5) *NAME OF RESEARCH ADVISER*

Dr. Luther L. Lindler

6) *TITLE OF RESEARCH PROPOSAL*

Regulation of the Expression of Pathogenic Yersinia pestis During intracellular Association with Macrophages

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Used Transposon TnphoA mutagenesis to identify potential Yersinia pestis genes which contribute to plague pathogenesis

2) Screened the TnphoA fusions in Y. pestis KIM5 for temperature regulated membrane-bound or secreted proteins

3) Identified nine thermoregulated chromosomal and plasmid genes encoding transmembrane and periplasmic proteins, five of them of unknown function

4) Investigated the effect these phoA mutants may have on virulence in a macrophage infection assay

5) Initiated the characterization of the function of one up-regulated, temperature-sensitive gene product designated ORF60

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

To understand the role of genes involved in plague pathogenesis, I investigated Y. pestis by random transposon TnphoA mutagenesis. This approach has led to the discovery of important virulence factors in Gram-negative bacteria, including Salmonella, enteroinvasive E. coli, and Vibrio cholerae. We have identified nine thermoregulated genes, five of them of unknown function. Alkaline phosphatase activity values and Western blot analysis confirmed differential regulation of the PhoA protein fusions at 26C versus 37C. We have identified two pCD1 plasmid TnphoA insertions that appeared to be lethal at 37C; one in YopD, a virulence factor up-regulated at 37C, the second in a hypothetical protein designated Orf60, which is located downstream to YopM. The results suggest that Orf60 (the counterpart of Y. pestis CO92 YPCD1.23) is a transmembrane protein, which is expressed and upregulated at 37C. Characterization of the function of Orf60 is currently in progress.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Identification of thermoregulated genes in Yersinia pestis using TnphoA mutagenesis

Isolation and characterization of Orf60, a thermoregulated, pCD-encoded Yersinia pestis protein

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Guerrero-Ontiveros, M. L., Cohen S., and L. E. Lindler. Identification of thermoregulated genes in Yersinia pestis using TnphoA mutagenesis. Abstract. 8th Yersinia Meeting. Turku, Finland

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☒ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify**

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

8 Short-term value: development of knowledge, skills, and research productivity
Comments:

9 Long-term value: how your NRC Associateship award affected your career to date
Comments:
Since I have started working at WRAIR I have switch my research focus from bioenergetics to genetics. This change was a need, among other things to be more competitive in the job market. The associateship represented a challenge and a great opportunity to fulfill this goal that definitely has enriched my knowledge, skills and research experience.

Administrative Support

8 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff **(Leave blank, if not applicable – e.g., NIST)**
Comments:
Prompt, friendly and efficient support whenever required

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

More frequent visits to get aquainted with the

US Postal Service mailing address
Research Associateship Programs
National Research Council
500 Fifth Street, NW [GR 322A]
Washington, DC 20001

fax
202 – 334 – 2759
rap@nas.edu
website
www.national-academies.org/rap

Express Delivery address
Research Associateship Programs
National Research Council
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

NAS
NRC NAE
IOM

FINAL REPORT FORM

Regular mail
Associateship Prgms. [TJ 2114]
NAT'L. RESEARCH COUNCIL
2101 Constitution Ave, NW
Washington, DC 20418

Express mail delivery
Associateship Prgms. [Suite 2114]
NAT'L. RESEARCH COUNCIL
1000 Thomas Jefferson St., NW
Washington, DC 20007

FAX: 202-334-2759

Clear

If you have downloaded this from a NRC e-mail attachment, you may print out, enter the information manually, and return via mail or fax. Or, you may enter the information electronically and return as an attachment.

1) NAME

Janos Milosevits M.D. Ph.D.

2) DATE

July 2, 2002

3) NAME OF LABORATORY/CENTER AND LOCATION

Walter Reed Army Institute of Research

4) DATES OF TENURE

from July 3, 2000 to July 2, 2002

5) NAME OF RESEARCH ADVISER

Carl R. Alving M.D.

6) IF YOU ARE ON LEAVE FROM A PROFESSIONAL POST, WILL YOU RETURN TO YOUR PREVIOUS EMPLOYER?

☑ Yes ☐ No

7) PROFESSIONAL AWARDS RECEIVED, SOCIETY OFFICES HELD DURING TENURE

NA

8) PROFESSIONAL TRAVEL DURING TENURE **List location(s) and date(s) of travel to scientific meetings. List foreign meetings separately.**

Sarasota FL USA : Oct 27-30, 2000

9) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES **List location(s) and date(s).**

NA

10) TITLE OF RESEARCH PROPOSAL

Role of Natural Anti-Lipid Antibodies in C-Mediated Phys. and Path. Processes

11) SUMMARY OF RESEARCH DURING TENURE **Itemize significant findings in concise form. Utilize concepts and key words.**

1) Analysis of squalene reacting monoclonal mouse antibodies
2) Detecting of squalene reacting natural antibodies in healthy and polyvaccinated humans by FACS
3) Analysis of crossreactivity of squalene reacting antibodies
4) Heat dependence binding of natural antibodies to squalene containing liposomes
5) Analysis of rat and pig granulocyte oxidative burst, effected by liposomes

12) RESEARCH IN PROGRESS **Briefly describe in 100 words or less.**

I analyzed the binding of natural and induced antibody to squalene and other lipids containing liposomes. I tried to get a better insight into the binding mechanism.

13) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH
Provide complete citation(s) including author(s), full name of journal, volume number, page number(s), year of publication.

(a) Publications in peer-reviewed journals:

Role of Complement Activation in Hypersensitivity Reactions to Doxil and Hynic-PEG Liposomes: experimental and clinical studies J. Szebeni, L. Baranyi, S. Savay, J. Milosevits, R. Bunger, P. Laverman, J.M. Metselaar, G. Storm, A. Chanan-Khan, L. Liebes, F.M. Muggia, R. Cohen, Y. Barenholz, and C.R. Alving Journal of Liposome Research 12(1), 165-172 (2002)

(b) Books or book chapters:

NA

(c) Manuscripts in preparation, manuscripts submitted:

The Interaction of Liposomes with the Complement System: In Vitro and In Vivo Assays J Szebeni, L Barany, S Savay, J Milosevits, M Bodo, R Bunger, and C. R. Alving Meth. Enzymol. (submitted)

14) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES
Provide complete reference with author(s), title, abstract/proceeding citation, meeting name, location. List foreign meetings separately.

Szebeni J, Baranyi L, Milosevits J, Bodo M, Savay S. and Alving C.R, Rolf Bunger (2002) Anaphylatoxin-Induced Cardiac and Hemodynamic Changes in Pigs. American Heart Association Scientific Meeting New Orleans, LA USA (Abstract)
Babai I, Matyas G, Baranyi L, Milosevits J, Alving C.R. Adjuvant effects and toxic effects of combination of squalene, Lipid A, and liposomes in mice (2002) Basic aspects of vaccines 8th National Symposium Bethesda, MD USA (Abstract)

15) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

NA

16) NEW POSITION TITLE, ORGANIZATION and ADDRESS

Director of the Saint Nicolaus Medical Service
Tokoli ut 166. Szigetszentmiklos 2310 HUNGARY

17) NEW POSITION PLANS **You may indicate more than one.**

- [x] *Research -- National Government* (U.S. or Foreign)
- [ ] *Administration -- U.S. Govt.* (Fed., State, or Local)
- [ ] *Remain at Host Lab/Center* **(Please provide name of Lab/Center.)**
- [x] *College/University Professor*
- [ ] *Postdoctoral*
- [ ] *Uncertain*
- [x] *Self-Employed*
- [ ] *Industry*
- [x] *Other*

18) FORWARDING ADDRESS **(to which your tax statement will be mailed)**

Dr. Janos Milosevits
Tokoli ut 166. Szigetszentmiklos 2310 HUNGARY

19) APPRAISAL OF THE ASSOCIATESHIP PROGRAM
Please evaluate each of the following on a scale of 1 (poor) to 10 (excellent):

5 ✔ a) Of what value was this experience to your career?
5 ✔ b) What is your evaluation of your experience in the laboratory?
5 ✔ c) What is your evaluation of your interaction with the NRC?

Please provide any additional comments on the usefulness of the Associateship Program to you, including suggestions for improvements.

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National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Nair	**Lalitha**	**PV**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
F 62, CSIR Scientist Apartment, Maharani Bagh, New Delhi 110065, India	**Phone: 91-11-6917555** **Phone: 91-11-6325129** **E-mail: Lalithapv@hotmail.com**
3) *Today's Date* **September 24, 2002**	*Dates of Tenure* from **October 11, 2000** to **October 10, 2002**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**CD & I, Immunology**

5) *NAME OF RESEARCH ADVISER*

David E Lanar

6) *TITLE OF RESEARCH PROPOSAL*

Cloning, Expression and Immunological Characterization of AMA-1 and its Subdomain Fragments in Bacteria

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Worked in the development of the purification of an important malaria vaccine target antigen PfAMA1/E that (99% pure) was scaleable and transferable to GMP facility, and that induced high titre growth inhibitory antibodies in rabbits.

2) Purification protocol was used in the writing of Batch Production Record BPR-480, entitled "Preparation of a Bulk Lot Recombinant P. falciparum AMA1/E Protein Expressed in Escherichia coli, Origami Strain.

3) The data from this analysis will be part of an IND application to the FDA to use this protein as a vaccine in humans.

4) Cloned, expressed, purified and immunologically characterized all six subdomain constructs from ectodomain of AMA-1 in bacteria. It enabled to fine map the immunodominant regions of the whole molecule.

5) Erythrocyte binding activity of AMA-1 and the subdomain fragments is established from this study. These data may help to develop better AMA-1 based constructs for vaccine study.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Cloned and expressed all the six subdomain fragments of AMA-1 ectodomain in bacteria, purified in order to fine map the immune responses. The purified double domains have generated high titre antibodies in rabbits that recognized the native parasite in IFA and recognized the parasite AMA-1 in Western blot experiments. Domain I+II generated most of the growth inhibitory antibodies on a growth inhibition/invasion assay in vitro, suggesting that this region is most important in AMA-1 ectodomain. Also, most of the immune responses towards the ectodomain are localized in the domain II, though this region alone is not enough to generate inhibitory antibodies. AMA-1 and all six subdomains, I+II, II+III, I+III, I, II and III have shown to have erythrocyte binding activity to human RBC. Immunization with single domains is being done. Projects on D I+II crystal structure elucidation and mapping of monoclonal antobodies are also in progress, in collaboration.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

1. Purification and characterisation of the refolded ectodomain of the Apical Membrane Antigen-1 of Plasmodium falciparum expressed in Escherichia coli. S Dutta, P V Lalitha, L A Ware, A Barbosa, JK Moth, MA Vassel, S Kitov, N Kolodny, J D Haynes and D E Lanar, Infection and Immunity, 2002, 70(6), 3001-10.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

1. Lalitha PV, Ware LA, Barbosa A, Dutta S, Moch K, Haynes JD, Lanar DE. Protective antibody responses to AMA-1 is directed towards D I+II: Results from Analysis of Cloning, expression, purification and immunological characterisation of refolded Plasmodium falciparum AMA-1 Subdomain fragments in E. coli.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

1. Process for purification of recombinant Plasmodium falciparum AMA-1 from E. coli . D E Lanar, S Dutta, L A Ware and Lalitha P V. Filed a Provisional U.S. Patent Application, filing date: March 26, 2001.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1. Barbosa A, Wood CL, Lalitha PV, Tighe JJ, Ware LA, Dutta S, Haynes JD, Moch JK, Bowden RA, Lanar DE, Heppner DG , Kellerman SA, Green LL , Production of Human Monoclonal Antibodies to the Plasmodium falciparum AMA-1 Protein, Paper to be presented at 51st ASTMH Meeting to be held at Denver, CO, USA during 10-14 Nov 2002.
2. Haynes JD, Lanar DE, Dutta S, Lalitha PV, Barbosa A, Darko CA, Angov E, Lyon JA, Narum DL, Sim BKL, Moch JK, Malaria Growth Inhibition Assays (GIA) in Vaccine Candidate Evaluation: Roles of Suspension GIA and Reversal of Inhibition by Antigen, Paper to be presented at 51st ASTMH Meeting to be held at Denver, CO, USA during 10-14 Nov 2002.
3. Cloning, Expression, Purification and Immunogenicity of Refolded Regions of Plasmodium falciparum AMA-1 Ectodomain in E. coli, Lalitha PV, Ware LA, Barbosa A, Dutta S, Moch JK, Vassell M, Haynes JD, and Lanar DE, Paper to be presented at 16th Annual Symposium of the Protein Society to be held in Auqust 17-21, 2002 San Diego, California.
4. Lalitha PV, Ware LA, Barbosa A, Dutta S, Moch K, Vassel M Haynes JD, Lanar DE. Immunological characterisation of bacterially expressed Plasmodium falciparum AMA-1 Subdomain fragments. Proceedings of Keystone Symposia, Keystone, Colorado, USA, 3-8 March, 2002.
5. Dutta S, Barbosa A, Ware LA, Fileta BB, Lalitha PV, Moch JK, Vassell MA, Haynes JD, Lanar DE. Biophysical, biochemical and immunological comparison of a refolded malaria vaccine candidate Pf AMA-1/E, produced under GMP environment in two bacterial hosts. Proceedings of "Experimental Biology- Translating the Genome" during April 20-24, 2002, New Orleans, Louisiana, USA.
6. Lalitha PV , Ware LA, Moch K, Haynes JD, Dutta S, Barbosa A, Lanar DE. Expression, purification and immunological analysis of plasmodium faliciparum ama-1 subdomains in bacteria, Proceedings of 50th ASTMH Annual Meeting, Atlanta, Georgia, USA during 11-15, Nov 2001
7. Dutta S, Lalitha PV, Ware LA, Barbosa A, Moch K, Haynes JD, Vassell MR, Lanar DE. Purification and characterization of a refolded plasmodium falciparum apical membrane antigen-1 ectodomain produced under cGMP conditions for clinical use, Proceedings of 50th ASTMH Annual Meeting, Atlanta,Georgia,USA during11-15, Nov 2001.

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

1. Cloning, Expression and Immunological Characterization of Apical Membrane Antigen (AMA-1) Subdomain Fragments from P. falciparum, Immunology Department, CD&I, Walter Reed Army Institute of Research, on 11 September 2002.
2. Cloning, Expression and Immunological Studies of Apical Membrane Antigen (AMA-1) and its Subdomain Fragments from P. falciparum, Seminar during NRC Meeting at WRAIR during April 2002

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Young Scientist Project, Department of Science and Technology, New Delhi, India for a Project entitled Structural and functional characterisation of some important malarial blood stage vaccine target antigens from Plasmodium falciparum Indian isolates.

14) *NEW POSITION TITLE*

Research Scientist

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Tentatively-Department of Science and Technology, New Delhi (Sponsors); Exact laboratory is to be decided in two months.

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

☐ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Administration in Industry
☐ Research/Administration in Non-Profit Organization
☐ Postdoctoral Research
☒ Self Employed
☐ Other: **specify**

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

7 Short-term value: development of knowledge, skills, and research productivity
Comments:
I had the freedom to choose my project, plan and execute the way I wanted; hard work and earlier experience in this field helped me a lot to be very productive.

8 Long-term value: how your NRC Associateship award affected your career to date
Comments:
It was really a good exposure, it helped me to get more confidence in my abilities to do research. I could collaborate with some other projects/ laboratories such as Crystal structure elucidation of D I+II of AMA-1(BSI Proteomics Corporation, Gaithersburg, MD), Mapping of human monoclonal antibodies (Arnoldo Borbosa, WRAIR ; Medarex Corporation etc.) These experiences certainly helped me to improve my skills and will help to work more effectively on my return to India.

Administrative Support

8 Quality of the support you received from the federal Laboratory

9 Quality of the support you received from the NRC staff
Comments:
I am extremely thankful for the liberal support I received from NRC staff both from my Institute (Dr Sara Rothman's office) and also from Washington DC office. I never had any difficulty in finding solutions to my tiny problems.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

ASSOCIATESHIP PROGS
RECEIVED JUN4'02

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Peng	**Daizhi**	

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
61 Zaozilanya Street, Chongqing 400015, China	**(086)(023)63853963 dzpeng@yahoo.com**
3) *Today's Date*	*Dates of Tenure*
May 15, 2002	from **January 5, 1999** to **May 4, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**AISR**	**Lab Division/Microbiology Branch**

5) *NAME OF RESEARCH ADVISER*

Albert T. McManus

6) *TITLE OF RESEARCH PROPOSAL*

Examination of DTC and PNA on Mortality in a Model of Antimicrobial Chemotherapy Resistant Sepsis

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Culture directed antibiotics have obvious therapeutical effects on burn wound sepsis rats within 3 days postburn .

2) The selection and dose of cultured antibiotics have influence on the effecacy of delayed antimicrobial therapy in burn wound sepsis.

3) Delayed piperacillin treatment mimic the clinical scenario where indicated antibiotic therapy is given and some patients still die of infection and organ dysfunction.

4) PDTC(NF-kB inhibitor) has no effect on the survival of sepsis rats in delayed piperacillin treatment, this might be related to the decreased serum level of IL-1 beta.

5) HMG-1 may be used as helpful markers of infection, tissue injury and inflammation.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The antibiotic treated sepsis model has been established as a more clinically relevant sepsis model. The mortalityies of this model are 65% and 35%, which can be acvhieved by different doses of piperacillin(200 mg/kg or 800mg/kg, q12h 10 days, respectively). When pyrrolidine dithiocarbamate(PDTC) was used in this sepsis model, it has no effect on the mortality. These indicate that sepsis death was caused by uncontrolled infection rathr than inflammation in this model. Serum HMG-1 level may be used as helpful markers of tissue injury, infection, and inflammation.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

No.

b) Books, book chapters, other publications

No.

c) Manuscripts in preparation, manuscripts submitted

In writing.

1. Efficacy of Delayed Antimicrobial Therapy in a model of infection related sepsis.
2. Pyrrolidine ithiocarbamate(PDTC) has no effect on survival in burn wound sepsis.
3. Effect of burn and infection on the serum level of HMG-1 in a rat model

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

No

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

No

Domestic

1. Peng DZ, McManus AT. Efficacy of Delayed Antimicrobial Therapy in a model of infection related sepsis. J Burn Care Rehabilitation 2002; 23(2 supplement): S118 34th Annual Meeting of American Burn Association at the Hyatt Regency in Chicago, Illinois.
2. Peng DZ, McDermott DJ, McManus AT. Pyrrolidine ithiocarbamate(PDTC) has no effect on survival in burn wound sepsis. Shock 2002; 17(supplement): (in press) 25th Annual Conference on Shock at Big Sky Resort, Big Sky, Montana.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

No.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

No.

14) *NEW POSITION TITLE*

N/A

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Institute of Burn Research, Southwestern Hospital, Gaotanyan Street, Chongqing 400038, China

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☒ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity
Comments:

10 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

No

THE NATIONAL ACADEMIES
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National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

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1) *Associate Last or Family Name*	*First Name*	*M.I.*
Riemenschneider	Jenny	L

2) *FORWARDING Address* (for tax statement / final stipend check)	*FORWARDING Phone(s) and E-Mail* (if known)
14629 Keeneland Circle Gaithersburg, MD 20878	phone: (301) 947-2923 phone: e-mail: jenmell@yahoo.com

3) *Today's Date*	*Dates of Tenure*
July 9, 2002	from March 1, 2000 to July 19, 2002

4) *Agency*	*Laboratory* or *NASA Center*	*Division / Branch / Directorate*
AMRMC	USAMRIID / NASA Ctr	Virology/Molecular Virology

5) *NAME OF RESEARCH ADVISER*
Connie Schmaljohn

6) *TITLE OF RESEARCH PROPOSAL*

EVALUATION OF DNA VACCINE STRATEGIES FOR EBOLA VIRUS IMMUNIZATION

7) *SUMMARY OF RESEARCH DURING TENURE* Itemize significant findings in concise form, utilizing key concepts/words.

1) Baculovirus derived Ebola virus glycoproteins are partially protective in guinea pigs
2) DNA vaccinated followed by protein boosts with Ebola virus glycoprotein is partially protective in guinea pigs
3) DNA encoding the protective antigen of Anthrax is protective against spore challenge in a rabbit model
4) DNA encoding the structural proteins of Venezuelan equine encephalitis virus is protecitive against infection in guinea pig
5) DNA antigens from multiple infectious agents can be combined in a vaccine without decreased efficacy

8) *RESEARCH IN PROGRESS* Describe in no more than 100 words.

There are currently no vaccines for a variety of infectious agents such as Ebola and Marburg viruses. Although there are vaccines available for agents such as Venezuelan equine encephalitis (VEE) virus and Anthrax, improvements to these vaccines are needed. As an NRC associate I investigated the potential efficacy DNA vaccines for all of the forementioned biowarfare agents. My research to date has shown that DNA vaccines against Ebola and Marburg viruses are approximately 50% protective in a guinea pig model. Even higher levels of protection were demonstrated for VEE virus and Anthrax in guinea pigs and rabbits, respectively.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

None

b) Books, book chapters, other publications

None

c) Manuscripts in preparation, manuscripts submitted

EVALUATION OF BACULOVIRUS-DERIVED EBOLA VIRUS GP IN A DNA PRIME-PROTEIN BOOST VACCINE REGIMEN
Jenny L. Riemenschneider, Aura R. Garrison, Joan B. Geisbert, Kamal Saikh, Kelli D. Heidebrink, Peter B. Jahrling, Robert Ulrich, and Connie S. Schmaljohn (in preparation).

DNA VACCINATION PROTECTS AGAINST MULTIPLE POTENTIAL BIOTERRORISM AGENGTS
Riemenschneider JL, Garrison AR, Custer DM, Geisbert JB, Lee J, Bassett A, Jahrling PB, Negley D, Hevey M, Schmaljohn A, and Schmaljohn CS (in preparation).

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

Protective DNA vaccine encoding the protective antigen of (PA) Bacillus anthracis. Vaccine involves DNA vaccination with the PA gene fused behind the tissue plasminogen activator (TPA) sequence.
CS Schmaljohn, L Iacono-Connors, JL Riemenschneider
Submitted March 12, 2002

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

None

Domestic

Heidebrink K, Mellquist J, and Schmaljohn C. Baculovirus expression of Ebola virus glycoprotein (GP) and nucleocapsid protein (NP). 19th Annual Meeting for the American Society of Virology, Ft. Collins, CO 2000 (Poster Presentation).

Riemenschneider JL, Custer DM, Garrison AR, and Schmaljohn CS. DNA vaccination by gene gun is protective against Venezuelan Equine Encephalitis virus in mice and guinea pigs. 20th Annual Meeting for the American Society of Virology, Madison, WI 2001 (Oral Presentation).

Garrison A, Riemenschneider J, Geisbert J, Heidebrink K, Jahrling P, and Schmaljohn C. Ebola virus glycoproteins produced by recombinant baculoviruses protect guinea pigs from Ebola virus challenge. 50th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Atlanta, GA 2001 (Poster Presentation).

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

"DNA Vaccines for Highly Infectious Agents" given at the Food and Drug Administration on May 14, 2002

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *NEW POSITION TITLE*

Biologist

15) *NEW POSITION ORGANIZATION* Provide name and city of organization.

Food and Drug Administration, Bethesda, MD

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- [ ] Remain at Host Agency as Permanent Employee
- [ ] Remain at Host Agency as Contract/Temporary Employee

Abbreviate Host Laboratory/Center_____

- [x] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory
- [ ] Research/Teaching at US College/University
- [ ] Research/Teaching at Foreign College/University
- [ ] Research/Administration in Industry
- [ ] Research/Admin in Non-Profit Organization
- [ ] Postdoctoral Research
- [ ] Self Employed
- [ ] Other: specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following

Your experience as a NRC Research Associate in this federal Laboratory 1 (poor) to 10 (excellent)

10 Short-term value: development of knowledge, skills, and research productivity

Comments:

USAMRIID was a great place to do an associateship. I had to hit the ground running and was actually surprised I could do so after graduate school, but I was ready for the challenge. I learned a tremendous amount in a short amount of time and was very productive in terms of the scientific research. I have been involved in research projects on numerous viruses and bacteria and learned much about each of them over the last 2.5 years.

10 Long-term value: how your NRC Associateship award affected your career to date
Comments:

I feel that being awarded the NRC associateship was a very good move for my career. I have made a lot of contacts and set up collaborations that may continue even after I complete my tenure as an NRC. I have learned managerial skills that I will take with me, as well as the in depth knowledge of bioterrorism related agents, which is very valuable in the current climate of the U.S.

Administrative Support 1 (poor) to 10 (excellent)

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff
Comments on both/either:

I dealt a lot with Lisa Bevell and she is very competent, friendly, and helpful. I felt comfortable letting her handle my questions and problems and felt assured that she would take care of matters in a timely and appropriate matter.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

I would suggest more structured interaction between NRC at the same institution or even at nearby institutions to encourage collaborations and friendships. It may even be useful to have a "welcome" lunch for just the NRC fellows each time a new NRC associate arrives; to help them acclimate a little faster and to not feel so alone as they are expected to hit the ground running.

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National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Roberson	**Melinda**	**R**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
2920 Carlyle Court	**443-512-0826**
3) *Today's Date*	*Dates of Tenure*
May 30, 2002	from **May 2, 2000** to **May 30, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**MRICD**	**Pharmacology/Applied**

5) *NAME OF RESEARCH ADVISER*

Dr. John H. McDonough

6) *TITLE OF RESEARCH PROPOSAL*

The effects of low-dose sarin exposure in a guinea pig model

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) 180 animals exposed to low-level sarin doses or saline (controls). Animals examined for signs of sarin intoxication, body temp, weight, EEG and general activity, and flinch threshold during the exposure period, and 3, 10, 30 and 100 days post-exp.

2) Low-level sarin exposure results in a dramatic reduction of red blood cell (RBC) cholinesterase (ChE) activity in both the 0.2 LD50 and 0.4 LD50 groups (<40% and <20% of baseline, respectively), as compared to controls.

3) Significant reduction in brain ChE activity in the six brain regions examined in the 0.4 LD50, but not in the 0.2 LD50, sarin animals, compared to controls. There was a steady return to baseline by 100 days post-exposure in both RBC and brain ChE.

4) Significant increases in activity (total distance traveled and center time) in the 0.4 animals, and in rearing in both the 0.2 & 0.4 animals at 100 days post-exposure. A mild trend toward increased flinch threshold in exposed animals was observed.

5) No change in body weight or temperature (pre- or post-injection), or in stereotypical behavior at any time point examined. No sarin-related change in EEG activity during the exposure period; the analysis of post-exposure EEG records is ongoing.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Interestingly, while the greatest inhibition of ChE, both RBC and brain, appears at the end of the exposure period (exposure day 10), it is at 100 days post-exposure--when ChE activity has returned to near-control levels--that the behavioral (activity) differences occur. This suggests that the initial reduction in ChE activity may lead to changes in neuropathology, neurotransmitter receptors or downstream neurochemical cascades that ultimately influence behavior. To determine what further changes in brain parameters occur, and whether these changes are permanent--or at least persistent, regional neurotransmitter receptor binding assays, examination of cortical EEG activity at the post-exposure time points, and neuropathological evaluations are ongoing. Western blot analysis of receptor-regulated amyloid precursor protein is also being carried out.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

Roberson, M.R., Schmidt, S.B., Gonzales, M.D. and McDonough, J.H. (2001) The potential neurotoxic effects of low-dose sarin exposure in a guinea pug model. Proceedings of the 2001 Conference on Chemical and Biological Defense.

c) Manuscripts in preparation, manuscripts submitted

Roberson, M.R., Schmidt, S.B., Gonzales, M.D., McAVoy, K.M., Francisco, C.P. and McDonough, J.H. (2002) The effects of chronic, low-dose sarin exposure on nociception, general activity and acetylcholinesterase activity (manuscript in preparation).

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Roberson, M.R., Schmidt. S.B., Gonzales, M.D., McAvoy, K.M., Francisco, C.P. and McDonough J.H. (2002) Depression Of Cholinesterase Activity By Low-Dose Sarin Exposure May Lead To Persistent Changes That Influence Behavior. Abstract submitted, Society for Neuroscience Annual Meeting, Orlando, FL.

Roberson, M.R., Schmidt. S.B., Gonzales, M.D., McAvoy, K.M. and McDonough J.H. (2001) The effects of chronic, low-dosesarin exposure on behavior, neurochemistry and neuropathology. Society for Neuroscience Annual Meeting, San Diego, CA. Soc. Neurosci. Abstr., Vol. 27, Program No. 971.11.

Domestic

Tsung-Ming Shih, Melinda R. Roberson, Stanley W. Hulet and John H. McDonough. (2002) The effects of repeated non-acute sarin exposure on physiology, behavior, EEG, neurochemistry and pathology. (Abstract submitted for platform presentation at the Bioscience Review, Hunt Valley, MD, June 2002.)

Roberson, M.R., Schmidt, S.B., Gonzales, M.D., MvAvoy, K.M., Francisco, C.P. and McDonough, J.H. (2002) The effects of chronic low-dose exposure on behavior, neurochemistry, and brain pathology. (Abstract submitted for poster presentation at the Bioscience Review, Hunt Valley, MD, June 2002.)

Roberson, M.R., Schmidt, S.B., Gonzales, M.D. and McDonough, J.H. (2001) The potential neurotoxic effects of low-dose sarin exposure in a guinea pug model. Poster presentation at The Conference for Chemical and Biological Defense, Hunt Valley, MD.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

Pharmacologist

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Neurotoxicology Branch, USAMRICD, 3100 Ricketts Point Road, APG, MD 21010

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☒ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity

Comments:

The NRC Associateship provided an excellent postdoctoral situation that allowed me to capitalize on strengths and abilities while facing challenges and acquiring new skills. Dr. McDonough, his colleagues and lab associates provided a nurturing/stimulating/congenial work environment. Because of the positive atmosphere and excellent facilities, I was able to largely complete a complex project about which I'm very pleased --in terms of personal AND professional growth.

10 Long-term value: how your NRC Associateship award affected your career to date

Comments:

I am gratified to have been offered a permanent position at MRICD, and am grateful to the MRICD and the NRC for providing me with a wonderful postdoctoral opportunity. This opportunity led to further personal and scientific development, as well as to a permanent job in a challenging and supportive Institute.

Administrative Support

8 Quality of the support you received from the federal Laboratory

8 Quality of the support you received from the NRC staff

Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
YUAN	**Huijun**	

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
Inst. of Otolargngology, Chinese PLA General Hospital, 28 Fuxing Road, Beijing 100853, China	**0086-10-68287882(home)** **Email: hj_yuan@hotmail.com**

3) *Today's Date*	*Dates of Tenure*
March 14, 2002	from **April 9, 2001** to **March 31, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**Biochemistry/Molecular Pharmacology**

5) *NAME OF RESEARCH ADVISER*

Ashima Saxana

6) *TITLE OF RESEARCH PROPOSAL*

Cloning and expression of genes encoding BChE and its mutants in E. coli surface-display system for decontamination of OPs

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) cDNA encoding 583-amino-acid mature bovine AChE was amplified and cloned into TA vector for sequencing.

2) Three expression plamids pBACgus3-ACHE (9.4kb), pBACgus9-ACHE (9.6kb), and pBACgus10-ACHE(9.7kb) were constructed and confirmed the correction by sequencing.

3) Two expression plasmid pBACgus3-ACHE and pBACgus10-ACHE were transfected the Sf9 cells with BacVector-3000 Triple Cut Virus DNA by Eufectin Transfection Reagent.

4)

5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

1. **Pick up and purify positive baculovirus recombinant**
2. **Expression and purification of recombinant fusion protein.**
3. **Activity and stability identification of fusion protein CBD-AChE.**

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

N/A

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

N/A

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

06/11/01 Mutations in the novel procadherin PCDH15 cause Usher syndrome type 1F
At Division of Biochemistry, WRAIR

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *NEW POSITION TITLE*

Associate Professor

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Inst. of Otolargngology, Chinese PLA General Hospital.

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☒ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

9 Short-term value: development of knowledge, skills, and research productivity
Comments:
Enhanced my knowledge and technical skill about the protein experssion in baculovirus system.S

9 Long-term value: how your NRC Associateship award affected your career to date
Comments:
Meeting with many accomplished scientists in this area will greatly benefits to my acedemic career in the future.

Administrative Support

9 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff
Comments:
Staff and support personels in the Division of Biochemistry, WRAIR, is very supportive, which made my project has been going smoothly and productively. NRC Staff are most frendly and efficient professionals I have ever seen in the government agency. The quality of their work (Lisa Bevell, Peggy Wilson) are very impressive.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

Give more chance to foreign scientist to be NRC fellows.

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Zhang	**Peng**	

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone and E-Mail* (if known)
14733 Yearling Terrace, Rockville MD 20850	**301-319-9516, peng.zhang@na.amedd.army.mil**
3) *Today's Date*	*Dates of Tenure*
July 30, 2002	from **February 1, 1999** to **July 31, 2002**

4) *Current Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**ET**

5) *NAME OF RESEARCH ADVISER*

Peter K. Chiang, PhD.

6) *TITLE OF RESEARCH PROPOSAL*

Investigate of Caspases mediated Apoptosis

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) The molecular mechanism of CEES induced apoptosis was discovered. CEES can inhibit PKD1-Akt/Pkb pathway, and in turn to inhibit Bcl family expression and stimulate caspases expression.

2) A genomic DNA fragment, which contain promoter region of human GST1, GSTa1, were cloned and finished DNA sequencing analysis.

3) A series inhibitors of caspases were designed to synthesis based on the structure of human caspase 3, and the activators were designed to synthesis based on malaria caspase structure. Human caspase 3 was overexpressed in E coli system.

4) . A novel apoptosis related gene, methionine aminopeptidase (MetAP), was cloned from malaria species. DNA sequencing of P. falciparum MetAP and P. bergheii MetAP were finished.

5) The noval apoptosis inhibiters, IAPs, were cloned from malaria species.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

In the Specific Aim #1: Investigate the functions and biological effect of chemicals induced cell damages. Studies for early cellular response mechanism of the intoxication induced apoptosis are in progress.
In Specific Aim #2: Modulation of apoptosis via control regulation of caspase expression. The cloned GSTs' promoters are going to subject Gene regulation study.
In Specific Aim #4: Anti malaria drugs against malaria caspases were deigned base on the structure difference between malaria and human genes. The kinatic parameters are been detecting.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

A novel pcna-binding motif identified by the panning of a random peptide display library
Xu H, Zhang P, Liu L, Lee MY.
Biochemistry 40(14):4512-20 (2001)
2.
Angiogenesis Inhibitors Specific for Methionine Aminopeptidase 2 As Drugs for Malaria And Leishmania
Peng Zhang, Diarmuid E. Nicholson, Janusz M. Bujnicki, Xinzhuan Su, James J. Brendle, Michael Ferdig, Dennis E. Kyle, Wilbur K. Milhous, Peter K. Chiang
J. Biomed. Science 9(1): (2002)
3.
Gene expressions in jurkat cells poisoned by a sulphur mustard vesicant and the induction of apoptosis

Peng Zhang, Patrick Ng, Diana Caridha, Richard A. Leach, Ludmila V. Asher, Mark J. Novak, William J. Smith, Steven L. Zeichner, and Peter K. Chiang
In press Br. J. Pharmacol.(2002)

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Malarial methionine aminopeptidase (MetAP) genes from Plasmodium berghei
Peng Zhang, Diarmuid E. Nicholson, Janusz M. Bujnicki, Michael Ferdig, Jianbing Mu, Xinzhuan Su, Wilbur K. Milhous and Peter K. Chiang
In preparation

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1.
Zhang, P., Ng, P., Mark,M.J,. Zeichuer, S., and Chiang, P.K.
Detection of Geath Genes by microarry in the Apoptosis of Jurket Cells Induced by an Alkylating Agent 2-Chlorethylethyl Sulfide.
40th Annual Meeting of Society of Toxicology, San Francisco, CA
2.
Chiang, P.K., Leach R.A., Caridha, D., Smith, W.J., and Zhang, P.
Signature Gene Expression of Jurkat cells treated with Sulfur Mustard and the protection by 3-Deaza-(+)aristeromycin
In XIVth Congress of Pharmacology, July 7-12, San Francisco, CA.
Pharmacologist 44(2 Supplement1) A126, 2002

Domestic

1.
Peng Zhang, Diarmuid E. Nicholson, Janusz M. Bujnicki, Michael Ferdig, Jianbing Mu, Xinzhuan Su, Wilbur K. Milhous, Peter K. Chiang
Malarial Methionine Aminopeptidase Genes from Plasmodium falciparum and Plasmodium Berghei
Genomics Workshop, Silver Spring, MD
2.
Zhang, P., Caridha, D., Leach R.A., Smith, W.J., and Chiang, P.K.
Signature Gene Expression of Jurkat cells treated with Sulfur Mustard and the protection by 3-Deaza-(+)aristeromycin
Bioscience Review Conference, Hunt Valley, MD
3.
Leach R.A., Caridha, D., Zhang, P., Smith, W.J., and Chiang, P.K.
Early Cellular Reasponces to Sulfur Mustard Intoxication
Bioscience Review Conference, Hunt Valley, MD

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

Scientist

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

Div. of ET
Walter Reed Army Institute of Research
503 Robert Grant Ave.

Silver Spring, MD 20910

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Admin Position in Industry
- ☐ Research/Admin in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other **Please specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

9 Short-term value: development of knowledge, skills, and research productivity
Comments:

9 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

US Postal Service mailing address
Research Associateship Programs [TJ 2114]
National Research Council
2101 Constitution Avenue NW
Washington, DC 20418

fax
202 – 334 – 2759

website
www.national-academies.org/rap

Express Delivery address
Research Associateship Programs [Suite 200]
National Research Council
1000 Thomas Jefferson Street, NW
Washington, DC 20007

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Zhu	**Shuren**	

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
14110 Grand Pre Road #33, Silver Spring, MD 20906	**Phone: 301-871-0032** **Phone: 301-319-9645** **E-mail: shuren.zhu@na.amedd.army.mil**

3) *Today's Date*	*Dates of Tenure*
October 7, 2002	from **November 1, 2001** to **October 31, 2002**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**Experimental Therapeutics**

5) *NAME OF RESEARCH ADVISER*

Ai Jeng Lin, Ph.D.

6) *TITLE OF RESEARCH PROPOSAL*

Design and Synthesis of Cysteine Proteinase Inhibitors as Potential Antimalarial Therapeutics

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **A novel class of peptidomimetic antimalarial agents has been discovered.**

2) **Compounds exhibited potent in vitro and in vivo activity against malarial parasites.**

3)

4)

5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

A novel class of peptidomimetic antimalarial agents has been discovered. The core structure of these compounds consists of a substituted 5-aminopyrimidone ring and a Michael acceptor side chain. These compounds exhibited potent in vitro growth inhibitory activity against both chloroquine sensitive (D-6) and chloroquine resistant (W-2) Plasmodium falciparum clones. This class of compounds exhibited weak to insignificant in vitro cytotoxicity against neuronal, macrophage, and colon cell lines. A scale-up synthesis has also been performed, gram quantities of these compounds has been made available for in vivo anti-malarial studies. Some selected compounds exhibited in vivo antimalarial activity at 40-160 mg/kg dosages.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Shuren Zhu, Thomas H. Hudson, Dennis E. Kyle, and Ai J. Lin, Synthesis and In Vitro Studies of Novel Pyrimidinyl Peptidomimetics as Potential Antimalarial Therapeutic Agents. Journal of Medicinal Chemistry, 2002, 45, 3491-3496.

b) Books, book chapters, other publications

None

c) Manuscripts in preparation, manuscripts submitted

None

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

None

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

None

Domestic

Synthesis of Pyrimidinyl Peptidomimetics As Potential Antimalarial Therapeutics, Shuren Zhu and Ai J. Lin, presented at the 34th American Chemical Society Middle Atlantic Regional Meeting, Towson, Maryland, 2001.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

None

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *NEW POSITION TITLE*

Research Associate

15) *NEW POSITION ORGANIZATION* **Provide name and address of organization.**

WRAIR, 503 Robert Grant Avenue, Silver Spring, Maryland 20910

16) *NEW POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center **WRAIR**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity
Comments:

10 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

10/7/2002